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VOL. 2. TORONTO, MARCH, 1921 No. 1.

THE CANADIAN VETERINARY RECORD

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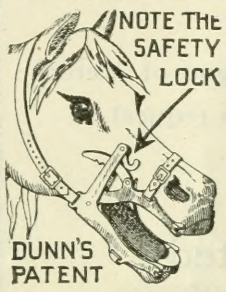

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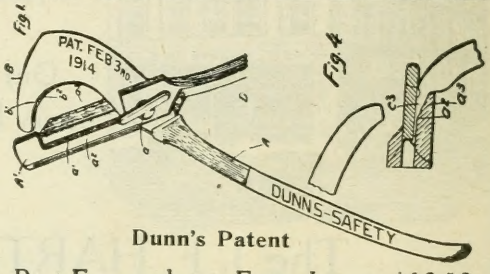

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THE
CANADIAN VETERINARY RECORD

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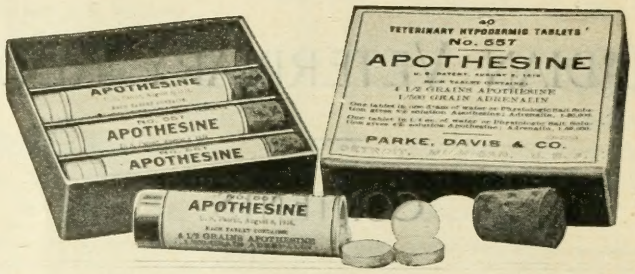

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THE
Canadian Veterinary Record

PUBLISHED QUARTERLY FOR THE PROFESSION IN THE INTEREST OF VETERINARY SCIENCE

Vol. II. TORONTO, MARCH, 1921. No. I.

Another Field For The Veterinarian

By J. A. ALLEN,

Animal Pathologist, Fox Research Station, P.E.I.

The writer ventures the prophecy that the modern, versatile veterinarian in future will have to extend his activities to the fur-bearing kingdom.

With the inroads of civilization many varieties of fur-bearing animals are rapidly becoming fewer, as is shown by the gradually decreasing catch in the wilds, while the demand of "Dame Fashion" for furs for use and embellishment is ever increasing. In this "Dame Fashion" is quite consistent in displaying her usual contempt for the demands of economists. When there is a scarcity of any commodity it is held in highest favor by Milady. Thus, during the world's war, when shoe leather was at a premium, a boot that did not have an extremely high upper was tabooed. When material is scarce there is usually a superabundance of girth, length and trimmings to feminine creations, and the appearance of the hobble effect, in which little stuff is required, may be taken as an indication that the mills are congested with fabrics of all kinds.

Sooner or later some species of these fur-bearing animals would become extinct unless attempts were made to domesticate them. Although in its infancy this work is already showing signs of expansion; and skunk, mink, martin, beaver, etc., are now kept in confinement in Canada, United States, Japan and some European countries. But more success has been achieved in the domestication of foxes, particularly the silver black fox, than with any other species.

Although a few foxes had been kept in confinement in Prince Edward Island for a great number of years, the expansion of the industry did not begin until 1909 or thereabouts. Before this time fox raising was a secret pursuit in which only a few were allowed to participate. The knowledge that the men already engaged in the enterprise were making handsome profits from the sale of the pelts of foxes which they were raising, gradually leaked out, and a scramble to get possession of foundation stock became a veritable craze.

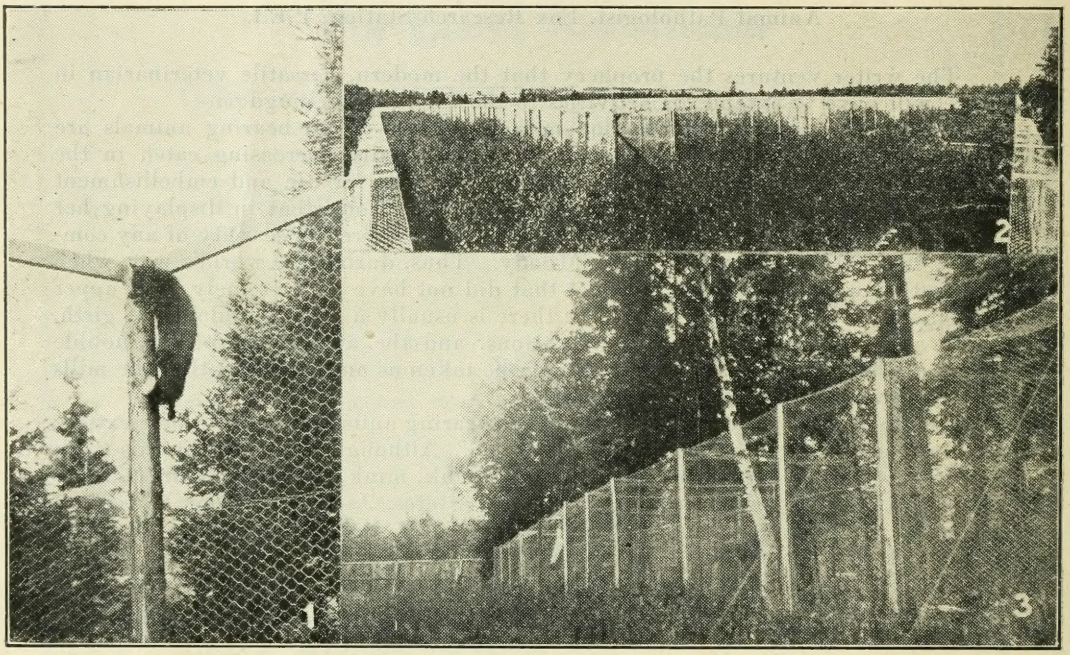
The practice of pelting ceased about 1911, and all available foxes were sold alive. So great was the demand that the cost of a pair of foxes steadily rose from $3,000 a pair in 1909, to $20,000 at the time the bubble burst. During the days of the craze as high as $35,000 were paid for exceptional specimens. When the supply of foxes for foundation stock became exhausted optimistic investors began speculating in futures, and options were taken on unborn pups for future delivery.

History repeated itself and, as in the case of the Belgian hare craze, the fox craze came to the inevitable toboggan. It would have probably lasted longer only for the European War, which brought a timely end to speculative fox trading. The war had a stabilizing influence and changed a highly speculative venture, from which the stock promoter got most of the fruits, into a legitimate industry.

While there were large sums of money made by some in these fox transactions, needless to say some individuals lost large sums in the same pursuit; for after the boom was over, a pair of animals that represented an investment of, say $20,000

was now only worth what their pelts would bring in the open market, approximately $2,000. Notwithstanding this decline in value many of the companies have survived, and the monetary gain reported in some cases would make "Get Rich Quick Wallingford" sour with envy. Here is an instance: A company was founded in 1910, or just before the exceedingly high prices were demanded for breeding stock. Starting with an investment of $4,000, which was spent in the purchase of one pair of foxes, this concern in ten years brought forth 58 pups, for which they obtained the sum of $240,000. The company has yet on hand 40 pairs of breeding foxes and 124 pups, and a physical equipment, all of which would bring on the market to-day approximately $60,000. All this income and physical assets have accrued from the original investment of $4,000. Numerous other cases could be cited in which the results were not nearly so romantic.

Some extremely high prices have been obtained for Prince Edward Island silver black fox pelts. Some few skins have brought prices varying from $1,700 to $2,900 on the London market. But these prices cannot be taken as anything



1—The "overhang" at the top of the pen prevents this fellow from going "over the top."
2—A bird's eye view of a fox ranch, showing guard fence, which surrounds the entire plant.
3—The outer or guard fence.

like the present market value of average quality pelts. To-day pelts vary in value from $300 to $1,000; exceptional skins may bring more than this maximum price.

So far as the fox industry on this continent is concerned, the days of speculation are apparently over, and live foxes are sold for what their pelts would bring, or a little more, because breeders recognize that every pair of foxes sold means a competitor. The market value of a pair of live foxes at present varies from $500 to $2,500, according to quality and performance.

According to a recent report of the Charlottetown Board of Trade there are 375 ranches on P.E.I. holding 4,500 breeding pairs of foxes in captivity. Two thousand foxes were sold during the year 1920, and brought approximately $500,000; three thousand pelts sold during the same year brought approximately $900,000. The total revenue derived from the fox industry of P.E. Island for the year 1920 is therefore $1,400,000. This sum exceeds that from any other branch of industry in this small Province, which has a population of less than 100,000.

Although Prince Edward Island is the home of the fox-farming industry, foundation stock has been purchased by individuals in other Provinces of Canada, and other countries. This emigration has been so great in recent years that it is estimated that there are nearly as many foxes in captivity in the United States as there are on the Island.

The men who are taking up fox farming are as yet merely experimenters, many of whom have no knowledge of the fundamental biological laws underlying their ventures, and are in need of efficient, expert advice. Many of their problems are primarily health problems in which the modern veterinarian should be keenly interested.

Veterinary Science is entering a new epoch; the conservation of fur-bearing animals. But if Veterinary Science intends to serve this new stock-raising industry it will have to study the problems first hand and not depend too much on analogous observation in other domesticated animals. Some of the idiosyncrasies of the fox are entirely dissimilar to those observed in either the cat or dog.

After a preliminary survey of fox ranches in 1918, the Health of Animals Branch decided to establish a research station at Charlottetown, P.E.I., for the purpose of doing some of this pioneer work. This station is entirely devoted to the study of the problems related to the diseases of foxes, and their control, and it is the only laboratory of its kind in the world. Other countries, particularly United States and Japan, are contemplating the establishment of similar stations.

Physical Equipment of Fox Ranches

Many mixed farmers are going into the breeding of one or two pairs of foxes. In this case the only equipment provided is a few wire cages located in the barnyard. A modern ranch devoted solely to the raising of black foxes covers an area of two to six acres.

The entire ranch is enclosed by either a board or wire fence, varying from eight to ten feet in height. At the top of this fence a strip of heavy netting wire, technically known as the "overhang," is projected inwards for two or three feet. This outer fence is called the guard fence, and serves the dual purpose of preventing the escape of foxes which may have secured their freedom from the pens within, and at the same time keeps out curious strangers and wandering animals.

The pens in which the foxes are confined are very similar in structure to the guard fence. The walls, however are always made of heavy netting wire. An overhang similar to that attached to the outer guard fence is placed at the top to prevent the animals from climbing over. The wire is also imbedded in the ground for about two and one-half feet, then is bent inwards for two and one-half feet to form a mat which prevents the animal from burrowing to freedom. The largest area provided for these pens is 50 feet by 50 feet (2,500 sq. ft.), the average space being about 625 sq. feet. We will refer to it later, but it is readily seen that when from two to six animals are continuously on such small area that sanitary problems are likely to arise.

The kennel or den is similar to a dog house in construction, but the floor area is three or four times as great. The kennel is divided into two compartments. The outer chamber merely serves as a vestibule, and a shoot leads from this outside. The inner chamber is well insulated by having a space, which is sometimes filled with chaff or sawdust, between its inner and outer walls. Usually the roof is hinged so that the animals may be approached from above.

The cooking house, storage house, and rancher's dwelling are located outside the wire enclosure. In the early days some ranches were equipped with a watch tower from which the animals and the approach of unwelcome strangers could be observed.

Fox Feed

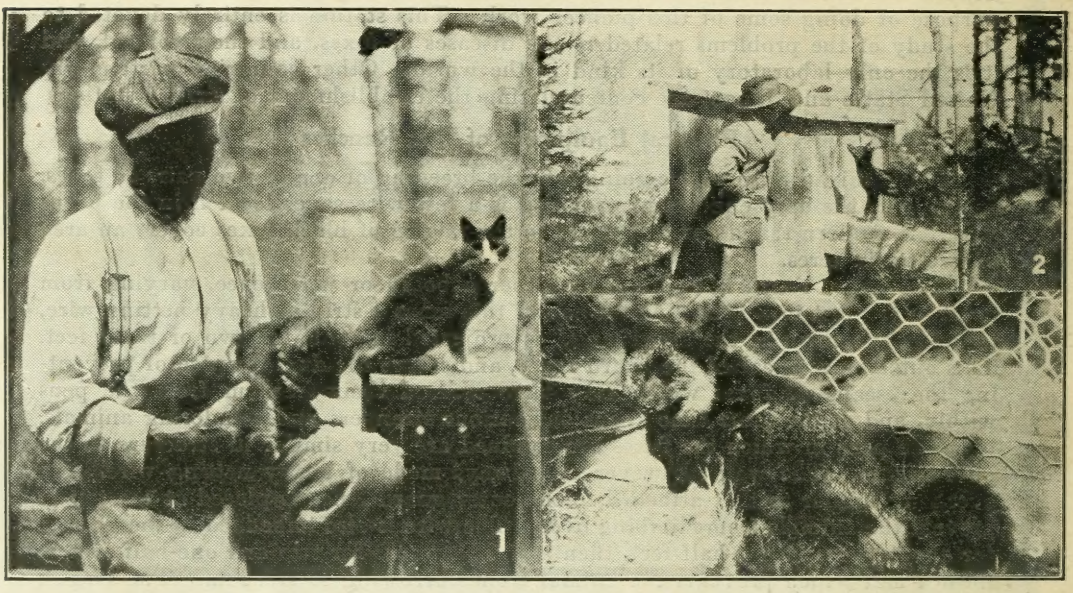
There is no standardized method of feeding foxes. The methods used and the foodstuffs entering into the black fox's dietary vary with the individual feeder. In many cases no attempt is being made to feed a balanced ration, and when there is an abundant supply of fish the animals are almost entirely fed upon this food,

and when meat is plentiful this is fed almost exclusively over a varied period. This matter is now receiving the attention of Mr. G. Ennis Smith, nutritional expert of the Council of Scientific Research, who is establishing a maintenance and balanced ration for foxes.

The principal foodstuffs entering into the fox's dietary are horse flesh, beef, mutton, pork, and occasionally rabbits and chicken; fish of various kinds, but principally smelts; liver, tripe and other offal; milk, eggs, fox biscuit of various kinds, bran, oatmeal, wheat porridge, home-made bread, fox and dog biscuits, shredded wheat, etc.

In most cases the animals are fed morning and night, but a number of successful fox farmers feed but once a day.

Until quite recently horse flesh was the principal meat used. Because of the large losses attributed to the feeding of horse flesh, it is not as popular as formerly. Most of it is imported in boxes from Montreal in spring and early summer, placed in cold storage on its arrival in Prince Edward Island, and taken out as required. Some of this supply is rotten before it reaches the cold storage, and it



1—Fox pups being raised on a foster cat mother. Cats take very kindly to fox pups.
2—A fox kennel. 3—A good specimen of a silver black fox.

often comes from unknown and uncontrolled sources, so that it is not always possible to ascertain whether the animals were slaughtered or died from disease. An enquiry in 1919 into the source of some of this meat supply brought the information that it was very improperly and dangerously handled; that some of the meat condemned by the city meat inspectors, and treated with chemical substances by them so that it might not be used for human consumption found its way into the Prince Edward Island supply, and that decaying carcasses of a variety of animals were sometimes included in the shipment. It was found, too, that the flesh of horses, sheep and cattle that die on the Island, is very often bought for fox-food. Numerous instances are on record where the flesh of animals which suffered from generalized infection was fed, and the results in some cases have been disastrous. Fuller reference to meat poisoning will be made in a subsequent article.

The Breeding of Foxes

So far no universal system has been devised of keeping records that would show the effect of breeding and inheritance. The representative ranches do keep records of performance and much benefit is derived therefrom. The chief breed-

ing points sought are naturally, texture, colour and length of fur, fertility and fecundity; and the usual criterion is the price brought for the skins of ancestors or offspring.

The mating season is in February or the early part of March, but matings may take place earlier and later than this period. The animals mate but once a year. In the early days of the industry much difficulty was experienced in getting animals less than two years old to mate, but now many yearlings are mated. In our opinion, there is great objection to this early mating, because it is questionable whether the young pup can withstand the physiological drain consequent to the bringing forth of offspring.

The gestation period in foxes is approximately 51 days, and the offspring number from two to six, occasionally one hears of a fox giving birth to as many as eight pups. On large ranches three pups per pair is considered a good average yield.

There is a considerable number of losses at birth which are attributed to a variety of causes, such as insufficient milk secretion, malnutrition, injury, and cannibalism of the parents. It is difficult to obtain any reliable data of these early losses because of tradition that interference at this epoch may result in the animals injuring their offspring in their efforts to hide them from the intruder. In one case which we investigated last year we found that the week-old pups were dying from a white diarrhoea from which an organism of the paratyphoid group was isolated.

When the vixen shows an inclination to neglect her progeny the pups are often transferred to foster cat mothers. Thousands of dollars' worth of foxes have been saved by the common or garden tabby. The experience with cat mothers has led a few ranchers to go to extremes in this matter, and pups have in some instances been put on cats when the conditions did not justify such procedure. It may be stated as an axiom that pups should not be disturbed unless the vixen absolutely refuses to mother them.

Up until recently fox ranchers have been working in the dark so far as breeding to type is concerned. They had no means of determining the kind of animal they should raise, and the only basis of judgment was the amount the pelts brought on the open market. It was realized that in order to standarize the methods of breeding that some means of comparison should be adopted. Under the joint auspices of the Commission of Conservation, the Department of Agriculture and Fox Breeders' Association, a live fox exhibition was held in Montreal from November 24th to 28th, at which over 300 foxes of all varieties were shown.

These animals were divided into four classes according to the amount of silver which they had on various parts of the body. Class No. 1, black and extra dark; class No. 2, dark silver; class No. 3, medium silver, and class No. 4, light and pale silver. A fox to be in the black class must not show over 10 per cent. of silver; in the dark silver class, not more than 25 per cent. of silver; in the medium silver class, approximately 50 per cent. of silver, and in the light and pale silver class, over 60 per cent. of silver was demanded. Each of the above mentioned classes were again sub-divided into four classes as follows: Adult males, adult females, young males, young females. This gave in all sixteen classes.

Eighty-five out of the 100 points were allotted to quality of fur, and color and texture obtained 40 out of the 85 points. Size and conformation had only 15 points allotted.

The holding of such an exhibition marked a distinct epoch in animal husbandry, since it was the first international live fox show ever held in the world. The cream of domesticated foxes was on exhibition, and the exhibitors went home with a distinct type of breeding animal in mind.

The Fox Breeders' Association has for some years kept a register for standard breed black foxes, and it is understood that this work is now being taken over by the Live Stock Branch at Ottawa, so that in future the domesticated black fox will be recorded just like pure-bred horses, cattle, sheep, etc.

Veterinarians will be interested in the empiric remedies and methods advo-

cated by some fox caretakers. Some of the theories are just as weird and as baseless as the proverbial "hollow horn" in cattle. Among the empiric methods recommended and applied by some of the men are the indiscriminate extraction of teeth for imaginary ailments; the introduction of a catheter into the trachea and blowing therein as a means of overcoming collapse; the oral administration of formaldehyde in the treatment of acute affections of the alimentary canal, and the feeding of freshly killed chicken as panacea for all fox evils. In order to obtain good results the carcase must be fed before the body heat is lost. Sour milk is said to have a remarkable anthelmintic effect.

Note—A subsequent article will deal with some of the diseases observed in foxes.

Acknowledgments—Published by permission of Dr. F. Torrance, Veterinary Director-General, and Dr. E. A. Watson, Chief Animal Pathologist.

STAINING SECTIONS FROM THE FREEZING MICROTOME

The following method of preparing and staining pathological material, when a quick diagnosis is required is in use at the Ontario Veterinary College:

The specimens are cut into small cubes and placed in a ten per cent. formalin solution for from twelve to twenty hours. From this they are placed directly upon the block of the microtome and covered with a few drops of a saturated solution of gum acacia. After freezing with carbon dioxide, sections from fifteen to twenty micra thick are cut, being removed from the knife to a dish of tap water. The next step is to dehydrate in 95 per cent. alcohol, from which the sections are floated on to a clean slide. By adding a few drops of a weak solution of celloidin in ether, the sections are made to adhere to the slide. Care should be taken to apply only a little of this solution, otherwise it will interfere with the later processes. With the sections firmly adhering to the slide which permits of free handling, the whole is placed in a dish containing Ehrlich's Acid Hematoxylin, which, if well ripened, should stain the nuclei deeply in about a minute. A bath of tap water is then used, requiring about one minute. This intensifies the nuclear staining. The next step is to dehydrate in 95 per cent. alcohol for about one minute, followed by a wash in tap water. The section and slide is now placed in a dish containing an aqueous solution of eosin and allowed to stand for about a minute. Dehydrate by standing successively for one minute in 80 per cent. and 95 per cent. alcohol. After clearing with oil of cloves and applying balsam, the section is ready for the cover-glass.

The above method is an adaption which will give satisfaction, since the sections will be found to exhibit good contrast staining, which is permanent. It will be found very useful as a rapid method of diagnosing new growths, and by using a fairly warm solution of formalin during the first fixing, a diagnosis can be obtained in five or six hours.

H. E. BATT,
Ontario Veterinary College.

Re Mallenders and Sallenders

Replying to our query regarding the origin of the terms Mallenders and Sallenders Dr. S. R. Howard, of Hillsboro, Ohio, writes: " . . . Sallenders and Mallenders, all I can offer is from the Farrier's and Horseman's complete dictionary, 157 years old. It refers under the head of Sallanders or Sallenders to Mallenders. Under Mallenders is a description and treatments given, quoting from Gibson, Bracken and Bartlet."

Canadian Plants Injurious In Hay and Coarse Feeds

H. B. SIFTON, Department of Botany, University of Toronto.

From the standpoint of the veterinarian and the stock raiser, Canadian poisonous plants may be divided into four classes, as follows:

(a) Weeds which produce injury when included in hay or other coarse feeds.
(b) Plants which injure animals in pastures or on the range.
(c) Plants whose injurious parts are likely to be included in various concentrated feeds.
(d) Poisonous plants which, while usually refused by animals, are sometimes eaten with bad results.

The purpose of our present article is to discuss the trouble produced by those of our common plants included under the first heading.

The **COMMON HORSETAIL** (**Equisetum arvense L**) may be considered first. It thrives best in a light sandy soil which is wet, or at least moist, for the greater part of the season. When present in hay used as feed for horses the plant is very likely to produce trouble. Cattle can apparently eat it with impunity, and its effects on sheep are doubtful.

Rich and Jones (Bull. 95, Vt. Ag. Exp. Sta.) describe a typical case illustrative of the effects of the poison. On one farm were fourteen horses, all fed on good hay. Nine of these were bedded with swale hay containing large quantities of horsetail. "They ate their bedding freely, and within three weeks all nine showed symptoms of poisoning. The remaining five, bedded with straw, kept perfectly well. The youngest, a three-year-old, was down and died a few days later. The oldest, an old brood mare, showed but slight symptoms, while the other seven, of intermediate ages, all staggered and reeled, although they recovered." This example illustrates the remarkable fact, that animals which have eaten the weed develop an appetite for it, preferring it to wholesome hay. Young animals are more seriously affected than old ones. In one case a mare exhibited no symptoms of poisoning until she had been eating the weed for four weeks, but the colt by her side developed symptoms and died in nine days.

The symptoms are characteristic. Diarrhoea and loss of flesh, are followed by muscular in-coordination, swaying and staggering and inability to stand. The temperature, at first below normal, rises to a fever heat owing to the animal's struggles to rise after it has fallen. The appetite remains good but weakness increases, and death may follow from exhaustion. Coldness of the extremities, and paleness of the mucous membrances are evident, owing to poor circulation.

The treatment recommended by experienced veterinarians is as follows:— Remove all horsetail from the animal's reach and administer a purge to free the stomach and intestines of the weed. Carefully refrain from exciting the horse, and provide good feed. A teaspoonful of nux vomica added to the grain three times daily helps to relieve the muscular trouble. It is important to keep the animal on his feet. If necessary slings should be used, arranged to press very lightly on the abdomen when he is standing erect, but to afford immediate support when any relaxation of the muscles takes place.

Animals in pastures are apparently not harmed by horsetail. This may be because of the laxative effect of the fresh grass, or because they have a better chance of picking their food. Grain fed horses are less susceptible than others.

The plant is easily recognized. It has an underground perennial root stock, from the nodes of which roots and stems are given off. In early spring comes the brown, succulent, grooved, spore-bearing stem, with a cone, bearing numerous sporangia, at its summit. It is jointed and has whorls of small, functionless leaves at the joints.

The green or vegetative stem comes later in the summer, and is the dangerous part. It contains all the chlorophyll, and must manufacture sufficient food for the support of next year's spore-bearing stem. It also is grooved and may easily be pulled apart at the numerous joints. Its sheaths of small leaves are useless for the production of food, this work being performed by the stem and the many three-or-four-angled branches. Stem and branches are very rich in silica, which makes them harsh and rough to the touch, giving rise to the name scouring rush, which is often applied to the plant.

Three other species of horsetail which grow in this country have been found to be poisonous. They are not nearly so likely to be included in the hay, however. All may be recognized by their jointed, grooved, harsh-feeling, hollow stems, and minute whorled leaves.

The **BRACKEN FERN** (**Pteris aquilina L**) occurs commonly in shady places in both Eastern and Western North America, as well as in Europe. It has for a long time been believed to be poisonous, but owing to the insidious nature of the disease it produces, definite proof against it was lacking until the extended investigations of Hadwen and Bruce proved its responsibility for the disease called "staggers," which has given so much trouble to horse owners. Their work was done in British Columbia, where bracken has been responsible for many deaths. One example mentioned by them is in the village of St. Elmo, where, during the winter of 1915-16, out of twenty-four horses owned by eleven farmers, sixteen died of bracken poisoning and four more were ill but recovered.

The bracken is one of our coarsest ferns. Its large dissected fronds stand from two to three feet high, and are one to three feet broad. The Latin name "Aquilina" comes from the fancied resemblance of their triangular shape to that of an eagle with outstretched wings. The clusters of sporangia are borne at the edges of the under surface of the pinnae, or divisions of the frond, whose margin bends over to protect them. Its spread may be checked by cutting in June and August before the spores have formed.

The symptoms caused are as follows: The appetite remains good, but the animal becomes nervous and constipated, and his gait is unsteady. His eye is congested and in later stages he stands with legs spread apart, and may fall if his head is raised. Increasing weakness follows until the horse is unable to stand or even lie naturally. As in the case of horsetail poisoning, he becomes greatly excited when unable to rise, and may batter himself badly before death ensues.

Treatment: The treatment recommended by Dr. S. F. Tolmie, of Victoria, B.C., who has had a great deal of experience with such cases, is as follows: Barbadoes aloes, seven drachms; calomel, one drachm, and ginger, one drachm. Half-ounce doses of potassium bromide twice a day in the feed or drinking water. One to two drachms of potassium iodide three times a day is recommended. Give medicine in the feed or drinking water, or with a syringe. Feed laxative foods, such as bran mash and carrots. Give enemas if necessary. When animal is very groggy place in slings, with extreme care, avoiding excitement as much as possible. Tie with guy ropes on both sides, in front and behind. Slings should be applied so that the belt presses lightly on the abdomen when the animal is standing erect, but so that on the least flexion of the joints, support will be given. In some cases cold packs to the head are recommended.

To the farmer who is unable to secure professional aid, the following treatment is suggested: "First remove all ferny hay and bedding. Give a quart of raw linseed oil, taking special care that none falls into the lungs. Five good clean hay, warm bran mashes and roots. The horse should be kept as quiet as possible owing to its nervous excitability. Warmth is of aid in combatting the affection, whilst a cold, draughty stable tends to lower the vitality." (Hadwen and Bruce.)

The eating of bracken in pastures has been known to produce similar symptoms, but none but exceptionally greedy animals will eat it while any grass is available. It may also be noted that, if a proper amount of wholesome feed is provided, most animals will discard it when mixed with hay.

Passing on to the seed plants, we have, among the grasses, **Hordeum jubatum**

L, the **Squirrel-Tail Grass.** This plant contains no poison, but produces mechanical injuries. Its fruiting spike, from one to three inches in length, is composed of numerous spikelets, each with three flowers, of which the centre one only bears a seed. The two glumes which surround each grass flower (forming the chaff in ordinary grasses such as oats) are here modified into finely barbed awns from one to two inches in length, and another awn grows from the lemma of the fertile flower. , In addition the sterile flowers themselves are usually reduced to bristles. The characteristic appearance of the spike, with its bristling awns, has given the grass its common name.

When the ripe grass is eaten these awns break up and adhere to the mucous membrane of the mouth, which they penetrate. Movements of the mouth work them into the flesh, especially about the teeth and gums. The ulceration which follows renders the tissues soft and more easily penetrable. Pus is formed and, in some cases, the gums become so diseased that the teeth fall out. Pammel quotes S. H. Johnson as saying: "I have seen lips eaten completely through, and tongues almost eaten off by the grass."

It grows in marshy or wet sandy places. When young it is harmless, but great care must be taken not to feed hay containing mature plants. It is not a perennial, and so may be exterminated by cutting before seed has formed.

LUPINES (**Lupinus spp.**) are extremely dangerous under certain conditions, and in the West, where they are very plentiful and used to some extent as pasture and hay, they have caused immense losses. Chesnut and Wilcox have enumerated a long list of casualties in Montana. Two hundred sheep were being moved and were allowed to feed on a patch of lupine. By next morning one hundred of the band were dead. Lupine hay was fed to one hundred and fifty bucks, and as a result of one feed ninety died. Three two-year-old colts were fed cultivated hay most of the winter, and then ate lupine hay for two days, when all died. In October, 1898, a snow storm covered the grass, and out of a band of 2,500 sheep, 1,150 died from eating the lupines. During the winter of 1898-99 about 7,000 sheep in Montana were poisoned by lupine hay, and of these over 3,600 died. Many more cases of a similar nature are recorded, and the evidence leaves no room for doubt as to the cause of death. In all cases the lupines eaten bore pods containing mature, or nearly mature, seed.

The experiments of Marsh, Clawson and Marsh, taken along with those of other investigators have established the fact that poisoning in this country is due almost entirely to alkaloids, which are contained in all parts of the plant, but are more abundant in the seed than elsewhere. The toxic dose of these alkaloids is very nearly as large as the fatal dose, and smaller quantities have little or no effect on the animals, being easily excreted. It thus happens that lupines and lupine hay containing no seeds may be wholesome and satisfactory as a feed, while plants will full pods are deadly poison. It has been established that the poison acts on horses, pigs, goats and cattle, as well as sheep. Cattle on the range usually leave the pods and so are rarely poisoned, but sheep eat them greedily.

The symptoms of acute poisoning in the early stages are cerebral congestion and great excitement, showing itself in sheep by rushing about and butting and pushing. Later the movements become irregular and in-coordinated, with spasms and falling fits. When the animal can no longer stay on its feet, convulsions like those caused by strychnine are often evident. The excretions of the kidneys are increased and are sometimes bloody. The immediate cause of death is usually respiratory paralysis which ordinarily ensues in half to one and one-half hours.

Sometimes in milder cases the animals live four or five days, the symptoms being less pronounced. In these cases the respiration becomes slow and labored, the pulse is weak and the animals fall into a state of coma.

In horses the symptoms given are dullness, contractions of the surface muscles, intestinal disturbances, usually manifesting themselves in constipation, but sometimes in diarrhoea, and a tendency to lift the fore feet high when walking.

The results of the search for antidotes have not been very satisfactory. Permanganate of potash has been recommended, but is useless unless given very early

in the course of the attack. Vinegar and diluted sulphuric acid are also spoken of as chemical antidotes. Hypodermic injections of such a sedative as morphine is useful in controlling the convulsions.

"There seems to be little doubt that, as in Zygadenus poisoning, if sodium bicarbonate can be administered at intervals frequent enough to catch the toxic principle as it enters the fourth stomach, recovery may be aided. This is of considerable theoretical interest, and the method might be used in order to save an exceptionally valuable animal, but, of course, range animals cannot be treated in this way." (Marsh, Clawson and Marsh.)

In Europe a species of lupine, **Lupinus luteus,** has caused trouble, producing a disease called **lupinosis.** Investigation shows this plant to be much poorer in alkaloids than our American species and the symptoms of lupinosis differ from those of poisoning by the lupine alkaloids. There is loss of appetite, weakness and fever in the early stages. An acute atrophy of the liver is generally present, giving rise to a yellow color in the conjuctiva and mucous membranes, and in the body tissues. In some cases the ears, eyelids, lips and nose swell. In addition there is cerebral excitement, gnashing of the teeth, pain in the posterior region of the body, diarrhoea and sometimes blood, bile and albumen in the urine. This disease is supposed to be caused by a substance which has not been isolated, but to which the name of "ictrogen" has been given. It is believed that ictrogen is produced by micro-organisms living on the lupine leaves, and this theory is strengthened by the fact that, while lupines in some fields produce the disease, those of the same species in other locations are harmless.

Lupinosis is very rare in America, if, indeed, it ever occurs here. Dr. A. D. Knowles, of Butte, Montana, had some cases in horses in which some of the symptoms were present.

In Eastern North America only a few species of lupines are found, **L. perennis** being the most common, but in the West they are very plentiful, and Rydberg lists eighty species from the plains and mountains. They grow most frequently on dry hillsides and are often cut for hay. When fed to animals care must be taken that no seeds are included.

They grow in tufts from a perennial root, and are easily recognized by the palmately compound leaves of entire oblanceolate leaflets, and the loose spikes of purple or whitish pea-shaped flowers. The keel of the blossom is scythe-shaped and pointed, and the filaments of the stamens are united to form a complete sheath about the ovary. The anthers are alternately oblong and roundish. The pod resembles that of the pea, and is often knotted by constrictions between the seeds.

They are easily eradicated by cultivation, but their destruction in uncultivated land is impracticable where they are present in quantity.

This discussion would be incomplete without some mention of the so-called "Forage poisoning" which often follows the feeding of mouldy silage, spoiled hay or immature mouldy corn to horses or mules. Cattle, sheep, pigs and poultry are apparently immune.

Many consider that moulds are the cause of the disease. Several different species are found on corn and hay, and a great deal of work has been done with a view to finding which is responsible. Many mouldy samples, however, are entirely incapable of producing characteristic results. This might be explained by peculiarities in the action of some moulds, the causes of which are not perfectly understood. For example: Dr. M. Otto has proved that, while a strain of **Aspergillus fumigatus** found in Italy is markedly poisonous, other samples of the same species growing in Germany are only slightly so, if at all.

Blakesly and Gortner found a toxin in common bread mould, which was extremely poisonous to rabbits, when injected in their blood. An extract from 0.045 gram of the mould killed a two pound rabbit in less than two minutes. They thought this might have some connection with forage poisoning, as the spores of black bread mould are extremely common. The mould seems to produce no results when eaten, however.

Some believe that certain bacteria, which sometimes accompany the moulds,

produce the poison, and Graham, Bruechner and Pontius have isolated a bacillus which they believe to be **B. botulinus,** the source of the dssease Boutulism, from hay which caused forage poisoning. However there is still room for investigation, to establish definitely the true cause of the disease.

The symptoms are progressive:—Weakness and staggering with a tendency to stumble, paralysis of the tongue, and throat muscles, with a dripping of saliva from the mouth, violent rushing about, followed by stupidity and loss of muscular control. The horse becomes unable to stand, bladder and bowels become partially paralyzed, and usually death follows in one or two weeks.

If begun early, treatment will save many animals. They must be purged to remove all traces of poison from the stomach and intestines, and access to mouldy feed must, of course, be prevented. Where paralysis of the throat has begun, medicine cannot be given by the mouth for fear of suffocation. In sub-acute cases Pammel recommneds a purge, large doses of **strychnine** as a nerve stimulant, and **Atropin** for the circulation. Haslam prescribes injections of **arecoline** or **eserine** and **pilocarpine,** followed by an anti ferment and possibly an aloes bolus.

FEDERAL EMPLOYEES HOLD ANNUAL BANQUET AT TORONTO

At the banquet held on Dec. 4th, 1920, at the King Edward Hotel, one hundred and twelve employees of the Health of Animals Branch of the Federal Department of Agriculture were present, the majority of whom were veterinarians. This fact dispels the popular idea that the field of the veterinarian is confined only to the country district, attending to the ailments of farm animals, and shows that owing to conditions caused by civilization, he has a place in large centres of population.

The Veterinary Director-General, Dr. F. Torrance, occupied the chair, and among the guests were: Hon. S. F. Tolmie, Chief Justice W. R. Riddell, Hon. Manning Doherty, President Reynolds of the O. A. C., Principal McGilvray, Mr. W. B. Roadhouse, Deputy Minister of Agriculture for Ontario, Dr. Daubigny of Laval Veterinary College, and Mr. C. F. Bailey, Director of the Royal Agricultural Winter Fair. Much regret was felt through the absence of Dr. J. G. Rutherford, who through unavoidable circumstances, was unable to be present.

After a sumptuous repast by those present, the chairman addressed the gathering and remarked what a pleasure it was for him to note the growth of the Health of Animals Branch of the Department of Agriculture. He briefly outlined the work carried on by this branch, laying stress on the fact that through the efficient help of the staff the dreaded Foot and Mouth disease of cattle has been kept out of Canada, which is no small consideration, regarding the live stock industry. He also referred to the note-worthy work of the Pathological division in cleaning up Dourine from the Western Provinces, due mainly to the individual efforts of Dr. Watson, now head of the Laboratory at Ottawa. Quite recently the Field Division accomplished an immense work in stamping out mange from Western Canada, where 100,000 head of cattle were efficiently dipped, in an area as large as Scotland. This permitted the mange restrictions to be withdrawn and will greatly facilitate live stock traffic. The control of contagious diseases in Canada, he said, is a record of which to be proud, since no other country raising the same number of cattle was so free from disease. Regarding the Meat Inspection Service, it has been in operation thirteen years and has grown considerably since its installation, despite severe trials and early prejudices, which it had to overcome. The packers recognizing its importance now work hand in hand with the Department. He then introduced Chief Justice Riddell, who gave an address that charmed all the audience.

Chief Justice Riddell revealed facts concerning the constitutional history of Canada not ordinarily met with in history books of the period. How many Canadians, for instance, know that Canada was nearly once traded for Guadeloupe. If all after dinner speeches were as interesting and instructive, humor-

ists and others would have to find some other subject on which to concentrate their efforts. We can safely say that it was the feeling of the audience that Chief Justice Riddell would bestow an untold benefit on Canadians, if he would put his knowledge of this subject in book form, and in fact not to do so would be shirking his duty to Canadians.

Dr. S. F. Tolmie was the next speaker. He pointed out that the veterinary surgeon of the celluloid collar, who chewed and whittled while awaiting the odd case of colic, was an antique. His work to-day was to safe-guard the herds of the Dominion, which constituted an investment of over two billion dollars. As a veterinary surgeon himself, he was proud of the record of the veterinary surgeons of Canada, to whom must be given the credit of keeping the herds in Canada free from infectious diseases. In referring to the embargo placed on Canadian cattle by the British authorities some thirty years ago, to prevent the possibility of establishing Contagious Pleuro-pneumonia in Great Britain, he said that since that time some three million Canadian cattle had been slaughtered without any symptom or post mortem lesion of the disease ever having been demonstrated, thus showing the absurdity of the embargo. He also pointed out that Canadian bacon had such a demand in the Old Country that it was used as an attraction to sell the less desirable product of other countries. He also informed the members of the Meat Inspection division, that he was doing all in his power to further their interests, and would be pleased to have a representative committee wait on him before he left for Ottawa.

Hon. Manning Doherty was the next speaker, and expressed his pleasure at being present at such a representative gathering, and said that although he himself was not a veterinarian he had the interest of the profession at heart, in as much that he was directly connected with the Ontario Veterinary College, which institution was in the very capable hands of Dr. McGilvray. In referring to the British Embargo on Canadian cattle, he said that while in England he had gone to considerable trouble to locate the real opposition and discovered the source to be from breeders of pure bred stock. He, however, was convinced that it was a mistaken policy on their part and felt that the opposition could be removed, if it were possible for Dr. Tolmie and himself to spend a month in Great Britain together.

President Reynolds in his address paid a tribute to the empiric veterinary practitioner, who rendered valuable service in farming communities before the advent of a graduate veterinary surgeon; but he was pleased to see the advance Veterinary Science had made in the last decade. He also felt that the proposed move to Guelph was a step in the right direction for the inprovement of veterinary medicine. In closing he remarked that a very terse statement he had heard recently defining an after dinner speech was to the effect that it should be like an American lady's dress—long enough to cover the subject, but short enough to be interesting.

Other speakers were Dr. McGilvray, Mr. W. B. Roadhouse, Mr. C. F. Bailey and Dr. Daubigny. Dr. Daubigny hoped that the next banquet would be held in Montreal, which would exclude any possibility of dryness occasioned by after dinner speeches.

Staining of B. Tuberculosis in Milk by the Delepini Method

A sample of milk is taken from affected quarter of animal and allowed to stand for an hour or two. At the end of that time if bacilli are present many of them will settle to the bottom. Pour off the top layer and centrifuge the remainder, make films of the sediment and allow to dry. When dry place in a covered capsule containing equal parts of absolute alcohol and ether, and leave for two hours. After this the capsule is placed in a dish of water which has previously been heated from 80 deg. to 90 deg. C., which causes the mixture to boil. After this has been carried out for from ten to fifteen minutes the films are removed and washed with absolute alcohol and stained with carbol-fuchsin, using the Ziehl-Neilson method.—Vet. Record, Jan. 15th, 1920.

Comparative Abdominal Surgery of the Dog and Horse

By T. E. SLEETH, Vancouver, B.C.

Abdominal surgery in the broad sense comprises the art of diagnosis and prognosis of the surgical diseases of the abdomen, a knowledge of the operative and manipulative measures available, the complications and sequelae which may ensue, and not of least importance in practice, an appreciation of the economic value of the results obtainable.

In veterinary surgery we are concerned not with one animal, but with several. Our different patients are affected with different diseases, their anatomical structures and the physiological processes going on in them are so fundementally different, that they provide different indications for surgical treatment.

Diagnosis.—Contrasting the methods available in man and in animals even the novice is struck with the fact that the animal is unable to express some of the subjective signs of most value to the human surgeon. There is no evidence of the onset of pain neither of kind nor degree and most important, no power to indicate its seat of trouble. Thus the veterinary surgeon has to fall back upon the available history of the case, and those objective physical signs which he can discover himself, viz:—the symptoms shown by the animal. Following the time honored custom, inspection, palpatation, percussion and auscultation are sufficient for routine examination.

Inspection.—This gives general information regarding defective breathing, contracted abdominal wall, presence or absence of visible peristalsis, swelling, distention and external wounds. It, however, does not help materially to a definite diagnosis.

Palpitation.—This is much more important. Palpitation of the abdomen will reveal the tonus of the abdominal muscles, especially the rectus abdominus and in cases of peritonitis, marked contraction, rigidity, and tenderness. On the other hand a sensitive or nervous patient has rigid muscles without any abdominal disease, and a tightly contracted knotted rectus may be mistaken for an abdominal tumor quite easily.

To obtain any information with regard to the abdominal viscera the rectus must be relaxed and sometimes it is necessary to give an anesthetic to secure complete absence of spasms. Flexing the thighs on the abdomen further relieves the tension of the abdominal wall. A knowledge of regional anatomy is essential. Further palpatation will give evidence of localized pain, movement of the palpated mass or organ with respiration, fluctuation or pulsation, consistency, shape and size, and the findings considered in relation to the other signs.

Besides palpatation from the outside there is of course digital palpation by the rectum and in the female, by the vagina, both of which are of considerable help in determining pelvic disorders.

Percussion.—This is another means of diagnosing tympanites of the stomach or intestines, and the presence of free gas in the abdomen. Similarly the presence of free fluid as in cases of acites, or of blood in cases of abdominal hemorrhages, is detected and also the size and consistence of the different viscera. Thus enlargement of the spleen or liver, distension of the bladder and the presence of solid tumors may all be determined in this way.

Auscultation.—By means of one or other of the many instruments devised, of which the stethoscope is the most useful, this is the last of the routine methods to be employed. By this means the movements of the hollow viscera, accompanied as they are by the characteristic sound, can be detected. When paralysis is produced by atony, fatigue, strangulation or peritonitis, whether local or diffused, the stethoscope will reveal the fact. On the other hand, when the impacted or fatigued organ is relieved, ausculation will announce the fact. Furthermore,

the size and limit of hollow viscera can be determined by its aid. In this connection may be mentioned one method of determining the size and position of the stomach, viz:—by giving, in separate solution, sodium bi-carbonate and tartaric acid, which when mixed in the stomach, causes sufficient gas to fill the organ, making its limit to some extent, visible from the outside and allowing its measurements by auscultatory percussion.

Modern surgery has seen the introduction of several aids to diagnosis which should be mentioned. From our knowledge of physiology of the different parts of the alimentary canal, it is evident that much may be learned by an examination, physical and chemical, of its contents, therefore, material vomited will give some indication of the condition of the stomach, e.g. when material contains blood and mucous membrane we have no difficulty in diagnosing ulceration of the stomach, or an excess of acid, whether hydrochloric or lactic, each has its own significance. In carcinoma of the stomach the hydrochloric acidity is always reduced. In gastric catarrh it is increased. Excess of lactic acid points to fermentative changes and stagnation of ingesta in the stomach.

In addition to vomited material the feces should be examined in forming a diagnosis, and such conditions as the passage of blood, the absence of bile, the presence of mucus or foreign bodies must be considered. Here the microscope may be used to advantage to definitely detect structures, or shreads of cancerous growths. In connection with the urinary tract an instrument of considerable importance in diagnosis, is the cystoscope, which is a metal tube provided with a small electric light at one end and can be introduced, along the male urethra, into the bladder and by an arrangement of prisms and mirrors, the interior of the bladder can be illuminated and seen through the object glass. By this means the presence of any growth in the bladder may be determined as well as tubercular patches or other lesions adherent to the mucous membrane. Even when all these methods have been tried and definite diagnosis is not yet possible the final plan of an exploratory opening of the abdomen in the median line is adopted, which gives the widest scope.

Turning again to the stomach of the dog. It is relatively large and in a moderately full state its greatest curvature comes into relation with the abdominal wall ventrally and to the left side behind the liver, reaching as far back as the level of the second or third lumbar vertebrae. The left extremity or fundus is large and round; it is the most dorsal portion of the organ, and lies under the vertrebral ends of the eleventh and twelfth ribs. In the intercostal spaces, on the left side, between the eleventh, twelfth and thirteenth ribs respectively, the muscles are somewhat loose, so that the stomach may be readily palpated, and examined by percussion or auscultation. These are helpful in diagnosis, especially palpation. A foreign body in the stomach, such for example as a long pointed piece of wood, will often project into the left extremity, and thus may easily be detected. Tumors of the stomach also, although extremely rare, are discovered by means of palpation. Distention with gas may occur either in rare cases of torsion of the dog's stomach or in dilation of that organ. Inflation by means of chemical reaction may be used to determine the size of the organ, and a bismuth meal followed by a series of X-ray photographs, will reveal the presence of obstruction. Further, the examination of the stomach content is facilitated by the ease with which the dog can be made to vomit. Frequently, of course, vomiting is itself a prominent symptom in this case, and will further assist diagnosis. Thus in the dog it is possible to discover with fair accuracy the condition, normal or abnormal, of the stomach, and where surgical measures are called for they can be undertaken at such a period in the history of the case as to promise a fair chance for recovery.

In the horse we have to admit at once that examination of the stomach is beset with difficulties. The organ is relatively small and does not come into relation with the abdominal wall, so that palpation is impossible. Percussion is of little value except in cases of gastric tympany, in which the left extremity of the distended organ is pushed up against the diaphram, in relation to the upper part

of the fifteenth, sixteenth, and seventeenth intercostal spaces on the left side. In these cases marked drumlike sounds may be obtained and the organ may be punctured by a trocar and canula, with as comparatively little risk as the introduction of the stomach tube to relieve the tympany. Auscultation is of no value.

Since the horse is practically unable to vomit we can obtain little or no information as to the content or condition of the stomach. The use of the X-ray has not been attempted so far as we are aware for locating stomach or intestinal diseases in the horse. In intestinal diseases of the horse, diagnosis is again very difficult, and in the majority of cases it is almost impossible to obtain definite signs of localization that are of value. The bulk of the loaded intestines being weighty, press down on the abdominal floor in the standing position, and the difficulty of placing the animal on its back without such restraint as would interfere with examination, or combine to make palpation and percussion from outside of little value. Tympanites may be detected, but it is only possible to hazard a guess as to where the gas is and what is the nature of the obstruction.

Impaction with ingesta may be correctly diagnosed, but the situation of the obstruction or the nature of the interferences with the normal passage through the bowels cannot be determined. Rectal palpation is, of course, of the utmost value, but there are very narrow limits to its possibilities of affording definite information. In abdominal diseases especially in obstruction, the intestines are often crowded towards the pelvis, and frequently one cannot pass the hand onward, in consequence of straining and pressure from distended bowels, but in cases where the hand has reached the flank one sometimes does discover displacements—volvulus or invagination—may feel and remove calculi and ascertain the condition of the contents of the colon, cecum, floating colon, and small intestines; and in hernia distinguishes and liberates omentum and bowel.

With faith in possibilities, rectal exploration may be tried again and again, and information may be gained by every investigation. In cases of hernia, umbilical, ventral or inguinal, there are usually definite indications, and the swellings can be seen and manipulated, either from the outside or by deep palpation in the inguinal region, and by rectal exploration.

Turning again to the dog the difference is again marked. Examination is quite easy and the physical signs obtainable are usually fairly definite. All parts of the intestines are open to palpation so that foreign bodies, tumors, intussusception and obstruction by fecal masses are easily detected, if the abdominal wall is not too tense. A digital examination per rectum supplies information as to its condition, and the other pelvic viscera, notably the bladder and prostates.

Percussion is of little value as far as intestinal diseases are concerned, except to determine general typanites, a rare condition in the dog; but for effusion, whether dropsical or inflammatory, it is a most useful method, for with varying positions of the patient the effusion is detected in different situations, being always evident in the lowest part of the abdominal cavity. Little help is to be gained from auscultation, except to determine the general paralysis of the bowel which comes on with acute peritonitis or local paralysis, such as occurs in bowel strangulation of hernia.

There are still two methods of making a diagnosis, vix:—inspection and by exploratory operation. These methods afford marked contrast in the horse and dog. In the horse we must rely to a considerable extent on observation of the case. Lacking definite physical signs the surgeon has to fall back upon symtoms, upon the history of the case, the character of the pain, whether feces are passed or not, the amount of tympanites, whether localized or general, and from a clinical picture of the whole, before diagnosis is attempted.

In the dog, on the other hand symptoms are of less value than physical signs. Vomiting may mean much or little, constipation similarly may be due to serious ocnditions, such as intussusception or to a reltatively trivial cause, where as the finding on palpation of the characteristic sausage-shaped mass, is definite proof of intussusception or foreign body in the bowel.

Exploratory laparatomy in the horse is practically untried as a means

of diagnosis, whereas in the dog, a medium incision about the region of the umbilicus will allow of such a search of the abdomen as to almost certainly detect any lesion which could be treated by surgical means. As the last example of diagnostic methods we may consider diseased conditions of the uterus. In this case, local symptoms are of considerable value and the increase in size of the abdomen, the presence of a discharge or increased frequency of micturation, from pelvic irritation, suggest the uterus as a seat of disease.

In the mare, pelvic exploration, whether per rectum or per vagina, is of much more use than palpation of the abdominal wall. Unless greatly enlarged, the uterus is a pelvic organ, and hence difficult to reach whether for the purpose of diagnosis or operation from the abdomen. The presence of a pathological enlargement in the uterus can be discovered by rectal or vaginal examination, but it is highly important to determine whether it is a tumor, a collection of fluid or mummified fetus, so a manual examination of the interior is made, via the os uteri.

In the bitch the uterus is chiefly an abdominal organ, and pelvic examination by the rectum or vagina is not of much value in the majority of cases. Palpation through the abdominal wall is often difficult because of the general fatness of the animal or because of functional enlargement of the mammary gland. However, in advanced cases there is enlargement of the organ and should percussion reveal dullness over the area in relation to the distended horn, the presence of a chronic discharge may be diagnosed. In cases where the os uteri is tightly closed there is no discharge and it is usually very difficult to pass a probe through it. In this difficulty an exploratory opening of the abdomen is not only helpful, but is absolutely called for, and delay may be dangerous.

Auscultation applied to the uterus is of little value. Indeed the only information it will furnish is with regard to the fetal heart sounds.

Prognosis.—And now having dealt at some length with the all important subject of diagnosis, we may consider the question of prognosis, and that, from two points of view. In the first place it is necessary to form an opinion with regard to any abdominal case, as to the chances of recovery without operation. Secondly the surgeon must be always able to give some indication of the economic results.

It is obvious that the most important factor in forming an opinion, is an exact and accurate diagnosis of the case. We have seen how extremely difficult diagnosis is in abdominal diseases of the horse, and in many cases both diagnosis and prognosis are impossible until the patient is so badly affected that no surgical measures would likely be of help. On the other hand there are cases which can be diagnosed early and it may be possible for the surgeon to say that unless an operation is performed the animal must die. A surgical operation upon the horse is necessarily a fairly costly one—aseptic surgery is never cheap—and if quite successful there is a need for a long period of rest with surgical dressings and attention for some time. At first the loss of condition has to be made up and the animal has to be returned in a condition fitted for work and not merely to prolong its life.

In the dog diagnosis, as we have seen, is more readily possible and prognosis is therefore more definite. Economical questions do not often arise, due to the great sentimental value set upon the dog. Moreover, abdominal operations require less preparation and cost less in dressings and appliances than in the horse. Lastly the result desired is the prolongation of life and not usefulness from an economic point.

Operation.—A very limited acquaintance with abdominal surgery will make it evident that for success there are certain rigid requirements. Firstly there is the preparation of the patient both before and at the time of operation. If the case is acute no time is available for preliminary preparation, but when possible a modified diet for a few days with a purgative is advantageous. The first step is the preparation of the operative field, i.e. the skin over the area where the incision will be made. After removal of the hair by shaving, the part is washed with soap and water, then with ether to remove the fat and finally rinsed in a five to ten per

cent. solution of lysol or septico, covered with a piece of lint soaked in the same solution, and bandaged up until next day. Immediately before the operation the same treatment is given, then painted with a two per cent. solution of idoine in rectified spirits, allowed to dry, and another coat is given.

Next we must consider the protection of the operative field from dust, loose hair and any possible infection. In the case of the dog this is easy. A piece of muslin of suitable size is sterilized by boiling, and a suitable hole is cut in the centre, large enough for the incision of the operation. The operator must pay particular attention to his hands, a thorough washing and then a good rinsing in rectified spirits to harden the skin and prevent sweating, are necessary.

It cannot be too strongly emphasized that antiseptics do not help clean wounds to heal, since they kill not only bacteria but also tissue cells, and healing is retarded. One of the few lotions which has no effect upon the tissue cells is normal saline, and it also has a very beneficial effect in replacing lost blood. It may also be used in rinsing soiled or infected viscera or for irrigating the peritoneal cavity, in cases where infection is feared.

Another matter of importance of any operation, especially in abdominal surgery, is the applying of hemostats. Vessels of any size must be ligated with either catgut or very fine silk, and any blood clots removed before closing the abdomen, for if left, they act as foreign bodies and also afford an ideal medium for organisms.

When an opening has been made in the peritoneum, an attempt should be made to close and seal it. The same principle holds good when an hollow abdominal organ has been opened and require suturing. The external serous or peritoneal coat will readily adhere if the two edges are brought into apposition, thus the edges must be turned in, so that serous membrane joins serous membrane. Further the sutures must not completely traverse the complete thickness of the wall, as the contents of stomach, bowel or bladder may escape. The Czerny-Lembert sutures must be used in which the ordinary rounded curved needle goes through the serous and muscular coats, down to, but not through, the submucous layer. Thus there is no chance of leaking if the sutures are close enough, for the peritoneal surfaces adhere very rapidly. Another reason for this suture in connection with the bladder is to prevent any stitch penetrating the whole wall, which would act as a foreign body and form a nucleus around which salt might be deposited, producing a calculus.

Operating in all the intra-abdominal parts, quickness and the minimum manipulation of the viscera are exceedingly important. Shock is easily produced by much exposure of the intestines and much manipulation may cause paralysis of any inflamed loops of bowel, with disastrous results. To prevent this it is always well to pack off the intestines in the abdominal cavity with a piece of sterile muslin or gauze dipped in warm normal saline and kept warm. When the wound is about to be closed the first step is bringing the two edges of the peritoneum togther, and securing them with fine sutures. The muscle and the skin are finally sutured separately or togther.

Sutures.—Silk must be boiled for thirty minutes, and then wound loose on a reel and kept in a 1-1000 bi-chloride of mercury solution. Catgut is more difficult to sterilize and had better be purchased in glass tubes ready for use.

When the operation is complete a piece of gauze is at once placed over the wound and the skin around it is then cleansed with warm normal saline or antiseptic lotion, wiping away from the wound. The gauze is removed and another sterile piece applied. Afterwards the wound is powdered with borax and iodoform and over this a bandage is placed.

Books are indeed like friends, but the volumes in a man's technical library are more; they are not only friends, but dear counsellors and advisers, helpers upon whose aid and wisdom a man can rely; their presence makes him rich; their loss no weight of gold can replace; they are partners whose mouths speak for him with "the adversary at the gate."—John Phillips, in Camera Craft, Feb., '19.

Laboratory Meat Inspection

By C. H. WEAVER

Never in the history of Canada has so much attention been given to industrial scientific research as at the present moment. It would therefore appear to be a particularly opportune time for us to consider carefully our attitude towards scientific evolution in order to see exactly what we are doing or expected to do in comparison with other lines of technical endeavor. The writer has nothing but praise for what has been accomplished in the few years which have elapsed since the inception of the Canadian Meat Inspection Service, and the one thing which impresses one most is the feeling among the staff to press on to a still higher plane. This is without a doubt the most healthy sign to be looked for anywhere, to be nurtured, cared for and fostered to the greatest point of development. Any profession, business, service or whatever it might be is on very safe ground as long as it strives for further attainment.

The processing of the various edible products has been wonderfully improved by closer veterinary attention and the application of scientific knowledge, for it is a fact that every process is based on scientific principles. It requires no stretch of imagination to see that one with intimate knowledge of the principles of bacteriology can check up much more closely such operations as the canning process than one who lacks this special training. One thing here should be striven for however, and that is facilities for working out the common flora encountered in this work in order that the greatest benefit possible might be derived from the labor of those so engaged. This does not pertain to that particular process alone but to all lines of edible plant operations.

The post mortem work is very well handled to-day and is, I believe, above just criticism. It does, however, offer a remarkably fine field for higher scientific development. Serious veterinary activities among the food producing animals is of comparatively recent date and as a result of that, as one might expect, the literature on the subject is very poor indeed. Such work as is available is generally from a clinical aspect where disease was apparent or death from natural cause had preceded the study made. The majority of cases coming to our notice are those which appeared normal to physical examination, and as a result of the lack of history the diagnosis is made correspondingly difficult. One must give due credit to the text books dealing with our particular line of endeavor but we must rembember that they were prepared from pathological material collected on another continent and even disease conditions differ according to locality, or at least different pathological conditions are encountered. One cannot read the works on human pathology without envy and expressing a hope for the early appearance of more and better books on our work, and while we are dealing with warm blooded animals in which the pathological analogy is great, yet there are many conditions not common to both, or reactions to infections showing no marked similarity.

Lacking in literature and having no immediate propects of any forthcoming, it would appear that we might very profitably devote greater energy to the task of definite study and tabulation of the material being met with. A systematic and routine sectioning of the doubtful or questionable cases would, if properly recorded, give us an enormous amount of valuable information. Poorly as veterinarians are paid for the class of service which they are expected to render, one nevertheless hears less complaint against that than against lack of immediate facilities for the study of interesting cases met with. While I have not the percentage of cases examined further than that afforded by the unaided eye, I think I can say without fear of contradiction that it is entirely out of proportion to the number found diseased at autopsy. Furthermore it can be truthfully said that this is no one's fault. When this service was inaugurated arrangements were made for the examination of pathological specimens, which were at the time considered

adequate, and these arrangements will remain in force until the Department is shown that other arrangements would be better and that the necessary expenditure is warranted. Formerly specimens were submitted because the packer protested the disposition of the inspector. To-day quite a different state of affairs exists and as a result different arrangements would suit better. The packer realizes now that the inspector is quite as conversant with the fact that he is merely a channel of communication between producer and consumer as he himself does, and that the economic loss resulting from condemnations must be borne by the consumer, consequently he rarely lacks confidence in the dispositions made. The inspector submits specimens to-day for the same reasons that the surgeon does, merely to enhance his own knowledge for handling future cases. The medical pathologist can do no further good for his subject when he holds an autopsy but he is able to procure knowledge for his profession which will be of the greatest assistance in future cases. His records are also protection to the institution to which he is attached, a point which we could well afford to remember, in justice to the service in which we labor.

In connection with a centralized laboratory service and in justice to the pathologist making the examinations, is should be pointed out first that the examination of specimens for the two branches of the departments are not entirely analogous. In the one case the contagious diseases have been well worked out and a blood specimen with the history is generally all that is needed to establish whether or or not the case is one coming under the Act controlling contagious diseases. With the other no history is available to begin with, then it is not merely a matter of stating the contagiousness or non-communicable nature of the case, and the naming of the infective agent should it belong to the former, but each case must be diagnosed. Frequently when the inspector submits a specimen he is unable to tell whether a bacteriological examination is needed or whether tissue sections will give sufficient evidence on which to base a diagnosis. Should the material be forwarded in preservative the former would be precluded, while if unprserved the latter would be rendered impossible. In the second place, the severe handicap which the pathologist suffers working in his isolation from the autopsy, should be recognized. In the course of a disease certain organs are affected only to a microscopical extent, and there is the possibility of such being omitted to further complicate matters. If the two workers could be more or less in contact, they would get a common knowledge on these points. One needs but scant knowledge of botany to know how utterly futile it would be to send blossoms to a botanist and expect him in every instance to correctly name the plant from which they were taken. Fortunately for him, plants generally are possessed of root, stalk, leaf, flower and fruit, and the greater part of this, sufficient to name the plant can be included as a specimen. When we nip a bit of tissue from a case and forward it to a pathologist, we are in many instances placing him in the position of the botanist in receipt of a single flower.

The beginning of a campaign for the eradication of bovine tuberculosis opens still another phase of serious consideration. When a stock animal worth thousands of dollars is condemned and sent for slaughter, there is naturally more interest taken in it than in the ordinary case. Permanent tissue sections filed from doubtful cases would protect the inspector who made the test, and would add that much more to the Department's records, should they be needed at some future date. I recall one case where an entire herd reacted except one head. It was sent to slaughter with the rest, and lesions were found which microscopically proved to be Actinomycotic. Finding these lesions to be due to a cause other than the bacillus tuberculosis gave the inspector who made the test, new belief in the tuberculin and freed it of the smirch of having failed to pick out a tuberculous animal. I feel it is needless for me to state here the difficulty of differentiating between Actinomycotic and Tubercular lesions of the lymph glands at a certain stage of development. Then there are the cases where the inspector is unable to say by macroscopical examination that tubercles have been found. Glands may be found

showing hyperaemia, but this may be due to many causes. The sectioning of these lesions alone might tell what they contained.

The pathogenicity of the bovine bacillus to human beings is no longer a matter of conjecture. As far as tuberculosis is concerned, the greatest thing the veterinarian can do for the human family, is to remove this source of infection. We undoubtedly can do this by liberal condemnation of the meat of those animals coming to us, but this would merely tend to mitigate the efforts of eradication, which after all is the only safe way for human protection. I should say as liberal disposition as possibly consistent with science, should be practiced with the sectioning of all doubtful lesions, to establish the extent of extension to maintain a maximum salvage, thus furthering the work of eradication.

We have in the packing houses one of the finest opportunities for post graduate veterinary pathological work that one could desire. Let us hope for facilities in these larger centres in the near future, to provide the field for young graduates to continue their studies, and add to our present knowledge of the pathology of the food producing animals.

In conclusion we should note that our service is judged in foreign countries, mainly by the scientific effort put into our work. By the same standards we are judged by other professions in this and other countries. As the veterinary educational institutions are raising their standards both as to matriculation and course of study, let us do our part by raising the standard of our work correspondingly, and thereby increase the value of our service to the country.

VACCINATING AGAINST TUBERCULOSIS

A. Calmette and C. Guérin—Annales de l'Institut Pasteur, 1920, vol. xxxiv., No. 9, p. 553 (L. T. Giltner in Journal of the American Veterinary Medical Association, February, 1921), Veterinary Record, London, January 22nd, 1921.

Calmette and Guérin have carried out experiments in vaccinating against tuberculosis, using cultures of the bovine bacillus rendered avirulent by repeated sub-culturing on medium containing bile. Ten calves nine to ten months old were used. Four were kept as controls and six were injected intravenously with 20 mgs. of the avirulent bovine bacilli (70th transfer). All ten calves were placed in a stable directly behind five adult tuberculous cattle in such a manner as to favor natural infection of bedding and feed. A year later three of the vaccinated calves were again given 20 mgs. of bacilli (89th transfer), and twelve months after this two of these were given a third injection of 20 mgs. (113th transfer). A tuberculin test one year after commencement of the experiment showed three of the controls and one vaccinated animal to be reactors, and two of the vaccinated animals gave doubtful reactions. The second test at eighteen months showed the same three controls reacting, but none of the vaccinated animals. A third test at thirty-two months gave a positive reaction in the same three controls and in two of the vaccinated animals that had only received one injection. At about the thirty-fourth month all the animals were slaughtered. The three reacting controls were tuberculous; the non-reacting control was free from tuberculosis; the two reacting vaccinated animals (vaccinated only once) were diseasesd; while the third test animal vaccinated once was healthy, as were also the calf vaccinated twice and the two vaccinated a third time. The authors believe that a large number of cattle should be used and the test continued through a period corresponding to the average bovine life. In order to make some approach to a study of the vaccine on human beings the Pasteur Institute, Paris, has obtained a concession of the Island of Roome in French Guinea, where there are chimpanzees in abundance and where a stud farm and laboratories will be established.

The Welfare of the Profession

By W. THOMSON, Keremeos, B.C.

There is nothing more true regarding the veterinary profession at the present time than is contained in the terse statement "We are at the parting of the ways." the transitional period always involves the changing of old systems for new and better ones. In the approachment of this, an appeal should be made through the progressive members of every provincial association in Canada to press for and support the creation of a Dominion-wide association, council or board having jurisdiction over the affairs of the profession at large. At the head and composing the executive of this body should be placed men of the proper mental calibre and vision to safely guide the profession through the transcending stages of advancement. To do this successfully and win the standing and recognition which the profession deserves will require the active and loyal support of each individual veterinarian being extended to those selected for the task. In addition, more or less fusion and loyal adherence must be obtained from every veterinary association in Canada and the hearty co-operation of veterinarians occupying government and municipal positions. The ultimate goal should be the formation of a Canadian National Veterinary Association, under a federal charter. The proper functioning of such would give impetus to a campaign of publicity to the value and essentialities of competent veterinary services in the matter of safeguarding the health of live stock and also that of co-operating with medical health officers to preserve the public health through the procurement of wholesome meats and animal food products.

I hear a note of warning, full of significance to the profession, that there is a lack of leadership. History, however, is pregnant with instances where, when the occasion arose, someone has risen above his fellows when the call went forth. The saving principle has always been the loyalty and encouragement extended to the one entrusted with leadership. Without loyal co-operation and active support on the part of the profession individually and collectively, even good leadership as a factor for creating and obtaining things essential to our advancement and best interests may remain impotent. Therefore, the proposal to establish a Canadian-wide National Association or Federation of existing associations with equitable representation vested with the usual authority to organize and to press for a Dominion Board and Registration calls for immediate response and action from every veterinarian. How many members of the profession in Canada realize the hopeless condition into which veterinary education was drifting, and had it not been for the efforts of those assembled at a special meeting held at Ottawa during 1918 matters would have gone from bad to worse, if that were possible. It was largely through the instrumentality of this confenence that needed changes were brought about. How many realize to what extent these existed and the probable effects of an apparently increasing lack of recognition and the lowering of professional standards through the medium of diplomas being granted promiscuously by so-called correspondence schools? These correspondence schools continued to function for many years to the great detriment of live stock men and graduate veterinarians. Happily the activities of these concerns have been largely curbed through the efforts of Dr. McGilvray, and for which he deserves the gratitude of the profession througout Canada. Dr. McGilvray has worked indefatigably for the good of the profession as a whole and his principles of fair play and a square deal all round are commendable. In fact, through his persistence and tenacity of purpose and his indomitable spirit and wise counsel the perniciousness of quackery and correspondence schools have been exposed and considerably suppressed.

It is now proposed to transfer the Ontario Veterinary College from its location

in Toronto to the proximity of the Agricultural College at Guelph. Some murmurings are heard. "Ye Gods, what next!" exclaim some old practitioners. Nothing, only this—that the centre of a large city is no longer the most suitable location for a fully up-to-date modern veterinary college, while a site close to an agricultural college offers larger facilities for live stock training and a better knowledge of animals in health and disease and a closer alliance between sciences having much in common. Such a location should also enlarge the usefulness of the college and, reciprocally, the profession at large.

In the essential differences that require to be adjusted from time to time in veterinary evolution there need be little diversity of opinion or conflict of interests. A Dominion-wide association or federation of the already existing associations would afford us community of ideas and purposes which would distinguish us as a whole with one voice and in accord. If anyone thinks the profession is dying out because of the inroads of the automobile and tractor, he has the wrong outlook. It is merely a transition which is evolving a state of things new and to which all must adopt themselves. Just permit the idea of better organization through a Dominion-wide association to revive your interest in the profession along modern lines to meet your requirements and let your ambition be Dominion Registration. A veterinarian so registered would be enabled to practice in any province on payment of the fee required by the Association of that province, and the objectionable features of being subject to other examinations could be avoided by passing a Dominion examination.

Supposing that the prospect of better conditions may take some considerable time to materialize, we should be incomparably more powerful to compel progress by confederation than under provincial organization alone. Confederation should, therefore, be our immediate objective. It is generally admitted that Dominion registration would elevate the standing throughout Canada and place the veterinary profession on the same level as the medical profession. To show what a national association can accomplish, one has only to think of the American Veterinary Medical Association and what is has done for the profession in the United States. Recently this organization was able to have removed the long-standing grievance of unequal treatment and invidious distinction meted out to the Veterinary Corps of the United States Army. While Canadians are eligble for membership in the American Veterinary Medical Association on equal footing with our American colleagues, nevertheless the full benefits of the organization are not possible of realization in Canada. It is for this reason that a Dominion organiztion is required in Canada.

In the selection of a name for such an organization, it should be distinctive and dignified. An appropriate title might be "The Canadian National Institute of Veterinary Surgeons." The standard of eligibility to membership to be a diploma from a recognized veterinary college and accredited as such. A permanent place of headquarters should also be established, preferably at the Ontario Veterinary College where the necessary accomodation is available and where the archives and literature of the Institute could be safely stored and find a permanent home.

In the meantime, could the different provincial organizations not appoint someone as their representative to attend a conference to outline plans and become organized. I hereby suggest that, if no one else will undertake the task, Dr. Torrance, Veterinary Director General and Dr. McGilvray, Principal of the Ontario Veterinary College, be appointed to formulate some preliminary plans and arrange for another conference such as was held in 1918. Let us, therefore, "clear the deck for action."

The Abbott Laboratories, manufacturing pharmaceutical chemists of Chicago, have recently established a branch at 57 Colborne Street, Toronto, to facilitate the distribution of their products in Canada. They were formerly handled by Messrs. Lloyd, Wood & Co.

Veterinary Science In 1678

By RONALD GWATKIN, Ontario Veterinary College.

In the library of the Ontario Veterinary College is an old book entitled "The Experienced Farrier or Farring Completed, by E. R. Gent, London, Printed for Rich. Northcott, adjoining to St. Peter's Alley in Cornhill and at the Mariner and Anchor upon New Fish Street Hill, near London Bridge, 1678." I have derived so much pleasure from the perusal of this quaint old book that it seems to me that a few extracts from it would be of interest to other members of the profession. The spelling and use of capital letters is retained but to simplify reading the modern "s" is used.

In his "Epistle Dedicatory" the author shows that he did not believe in hiding his light under a bushel as may be judged from the following:—"You would say, That this Book, though New, is no otherwise then Old, by reason that a great Part thereof are Collections, and therefore the less to be regarded. Let me ask you one Question, Is the Honey the worse, because the bee sucks it out of many Flowers; Or is the Spiders web the more to be valued, because Extracted out of her own Bowels; Let not this be any prejudice to this Book, but peruse it without Partiality, and with the judgement of a Farrier, and you shall then find that these Old Collections are become New; not because they are New Printed, but because they are New Digested and Modelized and put into a better Form and Method than ever yet before Printed. For let me tell you, there was never anything in this Nature ever Printed before, but there was something or other wanting to make it a Compleat Book of Farring. But in this you shall finde nothing wanting, either to the Perfecting a Cure of all Diseases of a Horse, either inward or outward, or to the making a man a compleat Horseman."

Here is a particular receipt for "The Cure of the Biting of a Mad Dog," "Take Hob-goblin, Periwincle and Box leafes, of each a handful, first mince them small, then stamp them very small in a Stone—Mortar, and with milk or beer administer it both at the change and full of the Moon."

"Particular receipts for a horse that has swallowed down Hens-dung, or any other venomous thing:"

"Take a Pint of Sallet-Oyl, and two spoonsful of sugar Candy beaten to powder and as much of the powder of Diapente, and brewing them well together give it him to drink, and for want of Diapente so much of the shavings of Ivory, or of an old stags-horn especially, the tips thereof burnt."

"Another."—"Take of the urine of a man, as it cometh warm from him, one Pint, of bay salt a handful, stir them well together, and give it him, and after walk him up and down for half an hour. If you desire to see more receipts you must look for things that are good to expel poison."

"To cure a horse of stumbling."—"To cure is to cut him of the cords as it is call'd, which is by cutting a slit upon the very tip of his Nose, and with your Cornet to take up the two great Sinews, which you shall there find, and so cut them asunder, and heal them up with some good healing Salve, and this will do him no harm but good, for in so doing it will give him the use of his legs so perfectly, as that he will seldom or never trip any more, and this can any ordinary Smith do. And my councel is that when at any time, you shall either breed or buy a young Horse, before or presently after you shall back him, let him be thus cut of the Cords, and you shall find great profit thereby."

"Markhams Master Medicine for Back-Sinew-Strain or any Strain Shrinking or Numbness of Sinews."

"Take a fat sucking Mastive-Whelp, flay it and Bowel it, then stop the body as full as it can hold with gray snails, and Black Snails, then roste it at a reasonable fire, when it begins to warm baste it with six ounces of Oyl of Spike made yellow

with Saffron, and six ounces of Oyl of Wax; then save the droppings, and what moisture soever falls from it, whilst any drop will fall, keep it for your use. With this anoint the strain, and work it in very hot, holding a hot Fire-shovel before it, thus do both Morning and Evening till amendment."

"The best Receipt for the Cure of the Glanders that is, which if the Lungs be not too much wasted, you need not fear the cure, For if any thing in the World will cure this disease, this Receipt will."

"Take a small Fagot made of the green boughs of the Ash tree, and set it on fire in some Chimney-corner, clean swept for your use, then having a gallon of the best Ale you can get in a readiness, quench so many of the coals that is made thereof therein as will make it pretty thick, then strain it through a Linnen cloth into some convenient Vessel fit for your use; then double it over again to make it the stronger, by quenching fresh coals therein; then strain the liquor from the coals as you did before, and when it is cold put it into a Bottle close stopped for your use; for if you do not put it in cold, it will quickly sour, which will spoil it. If you make it strong enough you will find that the coales will drink up a quart or more of your Ale; when you use it, shake the Bottle to make it all alike, then pour out of it so much as you think fit for your use, and warm it luke-warm, and put a small drenching Horn full of it into each Nostril of your Horse, if he runs at both, if not but one will serve; do this Morning and Evening during his cure and ride him gently after it for about an hour, then let him feed awhile upon hay, and after that you may give him some drink; Three or four quarts of this Liquor will perfect the Cure at the farthest; if you find that the Kernels under the Chaul do waste, which this Liquor will take away in four or five days at the furthest, you need not much question the Cure; you are to keep him in the House during his cure. After you have given him this drink for about a week together you may rest him, by forbearing to give him any more for a day or two, then give it him again, and so use it till you have cured him."

Lack of space unfortunately prevents me from presenting to the reader the correct days of each month to bleed a horse, and under what different conditions the blood should be taken from the right or left jugular vein; the proper time of the moon to breed a mare, and much information of a like nature. It is perhaps as well that is is not our present day text book, because hunting grey and black snails would be troublesome, and as most of the prescriptions require a gallon of good ale or a pint of brandy our practice under present conditions would be necessarily limited.

The Horse Popular Again.

Reports persist that horses may be returned to the White House stables when Senator Harding is inaugurated, and a great many folks in Washington hope these reports are true. For, regardless of the fact that Washington society now rides very largely in high-powered gasoline hacks, it does not like the custom half so well as it does riding behind horses.

There is something about driving a horse and carriage these days that suggests exclusiveness to society. Maybe it is the $40 hay.

No horses have been in the White House stables since early in the Wilson administration. The president used to go cantering over the hills every now and then, but he was no Tom Mix at riding.

Roosevelt and Grant were the two greatest admirers of horseflesh ever in the White House. Roosevelt loved to ride and Grant to drive.

Having discovered that caterpillars are immune to various pathogenic organisms, a French scientist is devoting his researches to the caterpillar in the hope of discovering the natural immunity it possesses against these organisms.

Unofficially we learn that Sir Leonard Rogers, Professor of Pathology at Calcutta, has evolved a treatment for leprosy. Further experiments are being made with cod liver oil as the curative agent.

Organization For Compulsory Dipping For Mange Eradication*

By A. E. CAMERON.

Mange of cattle has existed in Western Canada for some years and has caused a considerable amount of trouble in the south-western part of Saskatchewan and the southern portion of Alberta. This territory was put under quarantine, no cattle being allowed to leave this defined area without inspection by a veterinarian of the Health of Animals Branch if for immediate slaughter; while if for any other purpose the cattle were required to be treated with the dipping solution authorized by the Dept. of Agriculture, under the supervision of an inspector.

Besides the general quarantine, infected herds with their contacts were held under quarantine until treated and reported as free from contagious disease.

These restrictions were very irksome and many meetings of Stock Associations and shippers were held to devise means whereby they might be removed. At on of those gatherings the stock men were informed by the Deputy Minister of Agriculture that if they would give their assistance and co-operation for compulsory dipping, and the dipping was carried out to the satisfaction of the Dept. of Agriculture, the general quarantine would be removed, and any mange which might subsequently be detected would be dealt with by the quarantine and treatment of infected herds and their contacts. This was readily agreed to by the stock men, and the Order-in-Council was made, which was necessary for the legal enforcement of the dipping.

The territory held under the blanket quarantine, known as the "Mange Area," has been reduced from time to time as portions were found to be free from mange. After a careful inspection of the different herds of cattle, during the end of 1919 and the beginning of 1920, the "Mange Area" was again reduced, leaving a small section of Saskatchewan and a larger part of Alberta to be organized when the compulsory dipping order came in force.

There are many difficulties in the complete eradication of mange from an extensive territory with range cattle at large. It was, however, believed this had become possible, as the herds of cattle on the open range are now comparatively few—most range cattle being in large fenced leases.

Accordingly, the Veterinary Director-General issued instructions to proceed at once with the necessary organization to carry the compulsory dipping into effect.

The quarantined area is administered by the Chief Inspector for Alberta, acting under the Veterinary Director-General. It is divided into districts, the executive work of which is carried out by veterinary inspectors. Each of these districts is subdivided, and range riders are employed who each cover a subdistrict, reporting mange or suspected mange to the veterinary inspector, under whose instructions they act. Reports from veterinary inspectors are forwarded to the Veterinary Director-General through the office of the Chief Inspector for Alberta.

It was now essential to have men who could get in touch with the individual stock owners in one or more townships, according to the settlement of the country. For this purpose veterinary inspectors selected reputable owners who were willing to assist in this way and act as committeemen for their locality.

Decentralization is carried out as much as possible, each veterinary inspector being responsible for his district. He can consult the Chief Inspector for Alberta on any matter, while the latter refers the larger issues to the Veterinary Director-General.

It may be assumed that any measure of compulsion must have the co-operation of the people concerned, and to gain this was the most important step. Ignorance

*Presented at the A.V.M.A. meeting, Columbus, Ohio, 1920.

of the disease is one reason why there is difficulty in getting active co-operation, many believing that mange is just in the country and always will be. To overcome these ideas a capable lecturer, a veterinarian of the Health of Animals Branch, went in succession to each inspector's district. The veterinary inspector arranged the meetings at which these lectures were given, and they were advertised locally. The lectures had as their primary object the enlightenment of stock owners on the cause of mange, its treatment, and the possibility of its eradication. The habits of the acari were described and mounted specimens were shown under the microscope. The reasons for the two dippings were given, and it was pointed out that the only treatment recognized by the Department of Agriculture is dipping in the calcium sulphide solution. This has been found safe and efficient, while the cost is comparatively low. This dipping solution is made in the proportion of 10 lbs. of lime and 24 lbs. of sulphur to 100 gallons of water. The lime and sulphur are mixed into a paste and boiled in a smaller quantity of water for not less than two hours, and finally diluted to the above proportions. The solution is used at a temperature of 105 deg. to 115 deg. F., and must have a specific gravity of 1023. The tester used is similar to a urinometer. The cattle are immersed in this solution twice, the second dipping being not less than 10 and not more than 15 days after the first treatment. The second dipping ensures the destruction of parasites which may be hatched from eggs which escaped at the first dipping, before they reach maturity.

For the benefit of committeement and in order that they could transmit the information to cattle men in their locality, circular letters were sent them periodically. They were written in as interesting a manner as possible, giving a general idea of the disease, its treatment, and the advantages to the stock men if the restrictions were removed. Instructions were given for the disinfection of stables and corrals, etc., between the first and second dippings.

Having shown that the total eradication of mange was possible if all cattle were properly treated and reinfection prevented by the disinfection of buildings, etc., it was brought home to each that he was personally interested in seeing that no cattle were missed, whether pure-bred, dairy, range or farmer's cattle, and that calves must in every case be brought to the vat for treatment.

There were already many vats in the mange area, but the building of many more were undertaken in order that no stock owner, especially farmers with one or two cows, should have to bring their cattle more than about 10 miles to be treated. The building of these extra vats was assisted by the Department of Agriculture, a grant being given when the vats were built according to the plans of the Department. The vat, which could be of either the swimming or cage type, had to be in working order, approved and reported on by the veterinary inspector before the grant was paid. At these Government-assisted vats the charge was fixed in the agreement signed so that not more than forty cents could be charged per head for the two dippings.

Advantage was taken of the meetings at which the lectures were given to organize the district, and where this had not already been done, committeemen were appointed. Arrangements for the building of the vats necessary were also made, and where one man could not undertake the building of a vat, it was found possible, in nearly every case, to have several form themselves into an association for the purpose.

For each vat a superintendent was appointed. He was instructed in his duties of supervising the preparation of the solution and seeing that every animal was properly dipped. Range riders saw that the large herds were gathered clean, and where any owner had not brought his cattle to the vat he was hurried up, or, if necessary, the cattle were brought in by the range rider himself or by someone hired for the occasion. In the latter case the owner was required to pay the expense.

The date set for the commencement, after consultation with representative stockmen, was June 24th, this being a time when few cows would be left in calf, the winter coat would be entirely shed, and as experience has shown, mange is in

a more or less dormant state, possibly on account of the fine oily condition of the hair and skin. Less infection showing at this time of year, the dipping would, presumably be more effective, with fewer parasites to destroy and less scale to protect them.

Lists were prepared of the stock owners in each district, with the number of their cattle and the vat at which they proposed to dip their animals. These lists, made by the range riders with the assistance of commiteemen, were at the vat concerned so that the cattle could be checked as they were dipped.

Articles dealing with compulsory dipping were prepared by officers of the Health of Animals Branch and published in the newspapers circulating in the mange area. The last action was the posting of large notices in public places notifying stockowners of the compulsory dipping order, with its requirements. With this chain of officials, lectures, circulars, newspaper articles and posters it would appear impossible for anyone owning cattle in the mange area to plead ignorance of the regulations.

In every community there are irreconcilables who, on general principles, are "agin the Government." In order that such people should not interfere with the effective dipping of all cattle a fine of $500 was made possible. A heavy fine was necessary as, for example, if a large stockowner chose to move his cattle out of the mange area without a license, his profits, if the market were favorable, might easily reimburse him for any small fine he might have to pay.

The shipment of cattle, for any purpose, after the 24th of June until the dipping was completed was prohibited, unless the cattle were accompanied by a certificate that they had been twice dipped. The railway companies were notified of this, as of all other regulations.

Dipping was carried out as arranged with only a few delays, owing to unforeseen circumstances, such as boilers leaking and accidents to vats. There was little trouble in getting the cattle to the vats, although some owners had to be hurried up. Veterinary Inspectors made a daily visit to each vat in their district and saw that everything was progressing satisfactorily. Range riders assisted in their sub-district, while vat superintendents remained constantly at the vat to supervise the actual dipping.

The time left to make the necessary arrangements was short, and that the compulsory dipping has been satisfactorily carried out reflects credit on all concerned.

Although it would probably be too much to hope for, in such a large territory, that mange would be entirely eradicated with the one compulsory double dipping, it is not unreasonable to expect that any fresh outbreak could be kept within easy control by the quarantine and treatment of infected and in contact herds.

A New Veterinary College for South Africa

We learn from the Rand Daily Mail, dated 18th Sept., 1920, South Africa, that Sir Arnold Theiler sailed for Europe on the 19th, and will be absent from the colony for ten months, during which time he will visit the important centres of research in the British Isles, the Continent and America. He considers this an ideal method of keeping abreast of the advance in research, and insists that the members of his staff take similar trips. Sir Arnold is head of the Research Institution at Onderstepoort, where he has done much research work for Veterinary Science, regarding the problems of the live stock industry of South Africa.

Plans are being made for the building of a Veterinary College at Onderstepoort, to cost approximately $800,000, and will, when completed, afford accommodation for fifty students. It is quite likely that on his return Sir Arnold will have with him a few experts to increase the staff at Onderstepoort, which would otherwise be too small to cope with the extended duties caused by the establishment of the Veterinary College. The course will extend over a period of five years, the last two years being completed in the field.

Toronto Milk Supply

By W. W. FORSYTH

The safeguarding of Toronto milk supply was first put into operation by the Department of Public Health thirteen years ago, and is under control of the Laboratories Division.

The City of Toronto, realizing the importance of a clean milk supply, appointed two veterinary surgeons to visit the farms of the producers in the country adjoining the city. At that time the Milk Act had not been passed, and veterinary inspectors had no authority outside the municipality. Nevertheless they did good work, visiting a large number of farms, educating the farmer along the lines of cleanliness and sanitation.

In 1913 four veterinary inspectors were appointed by the city for this work, with the result that many more farms were visited and at more frequent intervals. From that time individual attention was given to certain cases.

Toronto consumes about 171,000 quarts of milk per day. This enormous quantity of milk represents the supply of over 3,200 dairy farms, scattered over twenty-two counties in Ontario.

The work of the inspectors commences at the farm and finishes with the consumer. Accurate records of results of inspections and tests are maintained by a central registry at the City Hall. The department can determine at a moment's notice the exact condition of the producer's farm at the last inspection, whether it is in Perth County or located in York. By a process of card indices they know if the last milk tests were up to standard or to the contrary, as the case may be. Veterinary inspection alone will not produce clean milk. However, the farmer may be subject to persuasion, and if need be, compelled to clean his cows and provide bedding, light and ventilation. To remove manure from the stables twice a day, to maintain cleanliness in the milking utensils, and to keep chickens and pigs out of the cow house, and to provide a separate milk room.

Many farmers assume an independent attitude regarding sanitary suggestions as a trespass upon their rights. However, they must comply with regulations, otherwise their dirty milk is excluded from the city.

The system of milk receiving stations now being introduced is a great improvement over old methods. At present there are eight receiving stations located in convenient parts of the country where the milk supply is large. They form a central point from which all inspectors can work, and permits of the milk being thoroughly chilled before shipping. Regulations demand that the milk cans must be sealed with a tag bearing the initials of the producer before they may be shipped to Toronto. This prevents tampering with the milk while en route.

The standard test under which milk is accepted is 3.25 per cent. butter fat and 12 per cent. of total solids. By the seal on the can it is quite easy to identify the farm from which the milk was sent. This protection is readily accepted by the farmer.

About 15 per cent. of Toronto's milk is brought in by wagon. Wagons carry about 20 to 40 cans to the load. This has always been a troublesome method and is far from satisfactory, as many of the producers shipping by wagon are old hands at the game, and some of them find it difficult to resist the temptation of the village pump. Milk is often purchased by the wagon dealer just outside Toronto, which also makes it difficult to get at the real offender.

The legal temperature limit for milk to arrive in the summer months is under 50 degrees Far.; in spite of this a large amount does arrive over that temperature. This is partly due to poor transportation facilities, together with the fact that many farmers will not chill their milk before shipping. It is upon the arrival of the milk at the retail dairies that the first samples for examination are taken. City inspectors carry a full equipment for this work.

A preliminary dirt test is made by filtering one pint of milk from each can through an absorbent cotton disc. If the milk contains crude dirt it is at once condemned as unfit for human food and returned to the shipper, with a large red label attached to the can, which can be seen by all his neighbours, who know what it means. All dirt discs are kept and filed at the laboratory, together with full particulars. For further tests the inspector mixes the milk with a sterile dipper, fills a seven-ounce sterile bottle from each sample. These are brought to the laboratory for analysis. At the laboratory these samples are tested for fats and total solids. Bacterial counts are made according to the standard technique by plating out high dilutions on nutrient agar plates and incubating at 37.5 deg. Centigrade for 48 hours. The bacterial count is 250,000 colonies for the winter months and 500,000 for summer per cubic centimeter of milk.

It is essential to keep and maintain accurate records of all offences arising in connection with shippers. In a series of offences, where it is impossible to obtain improvement, these are excluded from the market.

Samples of milk are often taken from the vans which deliver to the consumer, and our observations go to show that the dealer does not skim or water the milk before he sells it.

Many improvements have been obtained by the process of control inrtoduced by the Health Department during the last ten years. Among these might be mentioned:

1. Sterilization of milk bottles with live steam before filling.
2. Sterilization of empty cans before being returned to the milk producer.
3. Checking method of sterilization by bacteriological examination of cans after sterilization by dairies.
4. Condemnation of rusty cans with poorly fitting covers.
5. Pasteurization of all milk which comes into the city. Pasteurization is compulsory, with the exception of "certified milk." The consumption of certified milk in Toronto last year was only one-half of one per cent. of the entire milk supply.

Pasteurization is done by heating the milk in vats at 60 degrees Centigrade for a half to three-quarters of an hour, then rapidly cooling it to 5 degrees Centigrade. This destroys dangerous organisms, but does not injure the so-called "Vitamines."

Even with "certified" milk there is a feeling of uncertainty, as while it is obtained from cows certified free from tuberculosis, it has been known to carry disease germs from the farm from which the milk was obtained. Outbreaks of measles, diphtheria, scarlet fever and many other infectious diseases have been traced directly to this source, and were in most cases attributed to attendants handling the milk.

Control of the milk by the city health authorities ceases after it reaches the consumer. Milk is easily spoiled by ignorance and lack of care in the home. During the summer months, when milk deliveries commence at 4 a.m., some people, too lazy to get out of bed, allow the bottle to remain at the door very often in the sun, until 8 or 9 o'clock, thereby undoing all the good work of protecting it from the time it left the cow by one foul blow.

In conclusion, there are still problems presenting considerable difficulties to overcome. For instance, it is obviously impossible to exclude milk from diseased cows for fear of creating a milk famine. But by a careful pasteurization of the milk after it is obtained, together with rigid inspection of cows barns and dairies, much is being accomplished in securing for Toronto a safe and healthful milk supply.

"Man o' War," the famous American Race Horse, has won $193,500 in two seasons. However, this is by no means a record, as "Isinglass" in days gone by in England won $287,275. People who love to talk of world's records for Man o' War should remember that fact.

EDITORIAL

All correspondence, articles and items for publication to be addressed
Canadian Veterinary Record, 110 University Ave., Toronto, Ont.

Service

There is no greater pleasure in life than knowing that you are giving Service. To veterinarians this is a feature too often lost sight of. To the young veterinarian launching out on his development of a practice, many things require readjusting. The readjustment on a basis of "Service" for which an adequate fee is charged means success or failure.

This is the age when "Service" counts for much in any merchandising or professional occupation. "Service" not only means a rapid response when called upon; it means giving an adequate value for the remuneration which is received.

We hear much discussion at veterinary meetings about the fees that should be charged the competition in the nature of unqualified men; yet, in the final analysis, it is revealed that the veterinarian who is successful is the one who is able to give a service commensurate with the charge which he makes. Fees, in a sense, are minor considerations. If in dealing with an animal that is ill or a problem which involves sanitation, a veterinarian can suggest treatment or action that will conserve the property of the owner, the service is considered cheap at any price. To give service one must keep abreast of the times, possess that confidence in his own ability which will convince by the results achieved, and he will find himself well able to collect any fee within reason which he finds it necessary to charge.

It is perhaps a misunderstanding of the aim of our Veterinary Colleges that a veterinarian feels on graduating a confidence that no further training is required. In the offices of many practitioners it will be found that the books on the shelves have not been augmented since graduation. This is undoubtedly a result of the lack of appreciation of what new text books and journals will give as direct and indirect returns. It is, and has been my view for many years, that veterinarians should be among the most widely read men in any community, not only on topics relating to their own profession, but also in medicine, agriculture (with special stress on live stock), and finally, Literature and Art should receive some consideration if the fullest service is to be rendered to himself and to the state of which he is an integral part.

One cannot render an efficient service as a veterinarian if he neglects giving attention to the fundamental elements of culture which have been very briefly outlined. With the multiplicity in the phases of veterinary practice the best service is to be expected from the best trained men. Post-graduate courses, attendance and participation in veterinary association meetings are duties which one owes to himself and those dependent upon him. The entire time after graduation should comprise one continuous post-graduate course, whether this be accomplished in his own office or through the participation in a course offered by a school of repute.

Serious thought should be given to the problems with which we are all confronted. The larger possibilities must be studied. Opinions must be given only after a full analysis of the factors that have a bearing on the propisition. These opinions may not always meet the approval of those from whom we receive our remuneration, but if honestly given they will be accepted, and time alone will determine their correctness. It is a fact that opinions which are given only after a full analysis of the situation are, as a rule, correct in a sufficient number of instances to warrant confidence and a continued respect.

All cannot occupy the higher places. Nature has supplied a very elaborate system which provides for all classes in every line of endeavor. We are not all so constituted as to permit of our reaching the topmost rung of the ladder of fame. Nevertheless, we should in our respective spheres give such service that our opinions are sought and our integrity unquestioned. C. H. H.

The Control of Veterinary Therapeutical Agents

For some long time the market has been flooded with veterinary medicines and remedies of the shot-gun variety. Exploiters of proprietaries take advantage of the lack of any kind of restriction in Canada against the sale of these products, with the result that all kinds of worthless and dangerous "cures" are being offered for sale. On every hand are seen proprietaries guaranteed to cure any disease from poll evil to contagious abortion. Attractive labels and artfully worded pamphlets appeal to unsuspecting live stock owners approached through the medium of advertisements in local newspapers.

One of our Associate Editors, whose article appears in this issue, writes concerning an alleged potent remedy which has been offered for sale in his district, consisting of a preparation made by adding caramel sugar to water in sufficient quantity to color it a dark brown. This is boiled with a little arsenous acid in an iron kettle and filtered. He states that the manufacturer charges $2.50 per bottle for this medicine, and it commands a good sale.

Many Veterinary proprietaries contain arsenic. This drug is at best a dangerous one and should never be prescribed, except by a professional man who possesses a knowledge of the case for which he is prescribing it. It seems high time that the live stock interests of Canada should demand that the Proprietary Medicines Act be amended to include veterinary patent medicines within the interpretation of that Act. All commercial veterinary preparations sold in Canada would then exhibit on the labels the formulae of the ingredients. Such a regulation would rather enhance the value of the preparation than tend to depreciate it. At the same time it would prevent fraud.

If patent medicines were registered, the formulae would be known to the Government, who would be in a position to pass a decision upon its efficacy. Furthermore, the preparation would, in the event of its containing a poisonous drug, be additionally safeguarded by a label containing the name and amount of the drugs used, instead of extolling its therapeutical virtues alone.

The Council of Pharmacy who conduct the analysis will see to it that the amount of poisonous drugs used is the minimum quantity allowed by law, and that the proprietary is labeled poison.

Scientific Records

Careful reading of many articles upon scientific subjects, particularly those dealing with experiments and results, reveal the fact that in some cases the writer starts out to record his experiences with the fixed idea of justifying the degree of fervor with which he embraces a theory or belief. In others the motive seems to be that the final paragraph may record a scientific triumph for the writer, who meticulously accounts for all his successes, but leaves failures unrecorded.

Both these attitudes are wrong. At the outset articles which exhibit them are robbed of the value they might otherwise possess. The only rational attitude in which one should attack a serious problem in experimentation is that of the open mind. Experimentation is generally for the purpose of discovery. Sometimes it is for the purpose of proof of things already discovered. But whatever may be the purpose for which experiments are undertaken, the worker should be ready to scrutinize and record every manifestation with a view to determining its correct relation to his logical sequence of investigation.

When the scientist has concluded his labors and writes his results for the benefit of others of the profession, his attitude should still be as open and frank as when he attacked the problem. In recording results of experiments, failures as well as successes should be noted, for it is as important to point out what has been discovered to be wrong as that which has been found to be right. After all,

nothing else impresses so much as frankness, and nothing else gives better indication of power and breadth of mind as a readiness to lay every bit of evidence upon the table in the cause of truth, the whole truth and nothing but the truth, for only thus can it be of its full benefit and value to scientific men.

A Great Loss to the Profession.

Through the death of Professor E. Wallace Hoare, F.R.C.V.S., Blackrock, Cork, Ireland, the profession has lost a true friend and a valuable clinician.

For many years he had been known as the author of two excellent books, "Veterinary Therapeutics" and "System of Veterinary Medicine." The former work has for many years been a leading text book at Canadian Veterinary Colleges.

Born in Ireland, he lived for a time in Montreal and attended McGill University there. On returning to Britain he graduated at the New Veterinary College, Edinburg, in 1886. A few years later he completed his thesis and was admitted to the Fellowship of the Royal College in 1891, and became examiner in 1901.

Whilst conducting one of the largest Veterinary practices in Ireland he never neglected his writings, for he published no less than three editions of "Veterinary Therapeutics." In all his tireless energy he lived with one ideal, one aim, the welfare of his profession to the highest idealism.

Acknowledgments

We take the present opportunity of thanking all those who have so generously contributed articles for this number of the Record. We also extend our grateful thanks to the different members of the profession who will advise and direct the policy of this paper in the future, and to the Associate Editors for their assistance in obtaining scientific articles and permitting the publication of their names.

PERSONALS

Of Interest to American Graduates of O.V.C.

We are indebted to Dr. J. A. Waugh, of Pittsburg for the following information regarding graduates of the Ontario Veterinary College in the States.

Dr. J. I. Gibson, for many years state Veterinarian of Iowa, has recently been elected Field Agent of the Illinois State Veterinary Medical Association, a new and original office created this year.

Dr. H. S. Richards holds the post of City Veterinarian to Pittsburg, Pa.

Dr. H. R. Church is State Assistant Veterinarian in the State of Pennsylvania.

Dr. M. H. McKillip, of Chicago, one of the most distinguished graduates from O.V.C. is wintering in Florida.

Dr. A. A. Tanner has retired from active practice and is at present located in Cleveland, Ohio.

Dr. W. B. Craig is Dean of the Indiana Veterinary College at Indianapolis, Indiana.

Dr. Wm. J. Waugh is travelling inspector in Pennsylvania for the Bureau of Animal Industry.

He also "writes:—"General practice is receiving considerable alteration on scientific lines at present in Canada and United States and the older graduates would do well to peruse the Veterinary journals and latest text books. Special post-graduate courses have been arranged in the Veterinary Colloges at Edinburgh, Liverpool and London; also at several in the United States and many Veterinarians are taking advantage of these courses.

"Pensylvania has recently organized a Bureau of Animal Industry, under the direction of State Veterinarian T. E. Munce, a very able man, and prospects were never brighter for progessive and well qualified Veterinarians nor darker for the dullards and sluggards."

Veterinarians of Manitoba Honored

The Manitoba Veterinary Association, is, as far as we have been able to ascertain, unique in Canada, in having four of its members holding the office of Mayor in their respective towns. Dr. J. A. Munn, of Carman, who is also president of the association; Dr. J. A. Swanson, of Manitou, who was president of the association, 1919; Dr. H. Thompson of Virden and Dr. J. M. Young of Rapid City. This is certainly a mark of respect shown to the profession, and speaks highly for the public spirit shown by the profession in Manitoba.

Obituary

We regret to report the death of Kenneth Roy Foster, of Gateway, B.C. For the last eleven years he had been inspector for the Health of Animals Branch, Department of Agriculture. Dr. Foster was a widower, Mrs. Foster having died only a year ago. The deceased left four small children, all of whom are under twelve years of age.

We regret to learn of the death of Dr. Harvey Malloy, at his home in Evans City, Pa. Dr. Malloy was a graduate of the Ontario Veterinary College.

Appointments

Lieut.-Col. T. J. de M. Taschereau, R.C.A.V.C. on November 30th, 1920, assumed the Command and Administration of the Canadian Army Veterinary Services, the administration of which was transfered from the Director of Transport and Supplies.

General Orders of Appointments contained the notice that Frederick Walsh, V. S., has been appointed Captain in the R.C.A.V.C., from December 21st, '20.

Dr. M. V. Gallivan has been transferred from Lethbridge and is now at the Biological Laboratory, Ottawa.

Dr. A. N. Vining has given up practice in Exeter and is now in control of the animals of the Spruce Falls Paper Co., Kapauskasing, Northern Ontario.

Dr. J. W. Heppleston accepted the appointment of Veterinarian to Messrs. Beatty & Beatty, Iroquois Falls, Ont.

The many friends of Dr. W. J. R. Fowler will be glad to learn that he has made a good recovery from his recent serious illness.

Dr. R. A. McLoughry, V.S., fomerly of Elkhorn, Manitoba, has been appointed to the staff of the "Nor' West Farmer," and is their field husbandry representative. His headquarters is at Calgary, Alberta.

Dr. B. A. Bescoby, Federal Veterinary Inspector at Emerson, is spending the winter with his brother, F. H. Bescoby, at Los Angeles, California.

PATENT MEDICINES

KENNETH CHESTER, Registrar of the British Columbia Vet. Assoc.

A matter that the Veterinary Associations and Live Stock Associations of Canada might take up would be to request the Dominion Government to amend the "Proprietary or Patent Medicines Act" so that it applies to patent medicines for animals, as well as for medicines for human beings.

Under this Act any person wishing to sell a patent medicine for human use must first take out a license from the Government, and in forwarding application for same he must disclose the full formula, which is passed upon by the Government as to its effectiveness to cure ills that it professes to, also print on the label the percentage of narcotic drugs, and alcoholic content.

In the United States the Act is equally applicable to patent medicines for animals as well as human beings, and there seems no reason why live stock owners should not have this protection in Canada.

Some of these "cure-alls" claim not only to cure minor ills, but the major diseases, many of which Veterinary Science has no cure for. It is not generally known that the chief constituents of these medicines are aqua pura and burnt sugar. The writer some years ago knew of a case in Ontario of a well-advertised patent remedy, which was made by the owner in a wash boiler on a stove, and consisted of water, burnt sugar to make it black and therefore strong, and a little arsenous acid. It was sold readily at $2.50 a bottle express collect, and shipped as far West as British Columbia. The stockowner could have obtained as much benefit for his animals if he had fed them two tablespoonsful three times a day from his farm pump.

The owners of effective remedies would not object to this supervision. Some of the owners of these patent medicines are graduate Veterinarians, and the point arises as to whether this is not contrary to the code of ethics, but that is another matter.

CASE REPORTS

TRAUMATIC PERICARDITIS IN A HEIFER.

The animal was a two-year-old heifer in good condition, and housed with the rest of the herd in a wooden stable where extensive alterations were in progress.

She had suffered from an overloaded paunch for a day or so, but was effectively dosed with salts by the herdsman. Following purgation, however, she looked a "bit queer" and I was called to treat her.

Jan. 27th—Standing and shivering, back arched, head lowered and hair erect. Pulse 70, temperature 102.2 deg. A thorough examination revealed nothing of interest, except that she was carrying a live calf.

I gave a drench containing a good dose of **Spts. Ammon. Aromat.,** saw her comfortably bedded and blanketed, and advised a warm mash.

Feb. 1st—Lying down, but rose on being urged; her condition had fallen off considerably. She kept her head down, though her eye was bright and the facial expression betrayed no anxiety. Herdsman stated that she picked at a little feed and had not altogether lost her cud. Resp. 20, temperature 105.6 deg.

Slight cough could be induced by compression of the trachea. Percussion over the pulmonary area negative on the right side. On the left it revealed increased dullness in the cardiac region. Heart impulse was feeble, but at the rate of 144 per minute; sounds muffled; peripheral pulse imperceptible. No evidence of pain could be induced, even by vigorous palpation of the xiphoid and cardiac regions.

I left a mixture containing **Digitalis** and **Nux Vomica** with directions, and informed the herdsman that the heifer had heart trouble, though I could not yet say of what nature.

Now, the owner of this farm lives in the city, 20 miles distant, and usually visits his farm by telephone. On being informed of my diagnosis, he insisted on calling another veterinarian of more mature experience. His choice was a practitioner with whom I enjoy cordial relations, so we saw the case together.

Feb. 5th—Animal lying as before with no apparent anxiety. Appetite practically gone. Rose with effort, because of weakness. Her condition had fallen off rapidly.

Temp. 105 deg., resp. 30, pulse 120. Heart impulse stronger than when last examined; peripheral pulse easily discerned. Still no pain on palpation. Dull area in lower anterior part of left chest somewhat increased, but indefinite. Distinct splashing accompanying the first sound of the heart could be heard even without a stethoscope.

The case having become definite, we returned a joint diagnosis of exduative pericarditis, and advised destruction.

Feb. 10th—Animal killed and somewhat hurriedly examined. Pericardium thickened and very much distended. It contained, on conservative estimate, three quarts of thin, yellowish-grey, foul smelling pus; no gas. Surface of the heart verrucoid in appearance and coated with a fibrinous deposit. Section of the myocardium revealed an external, yellow-colored zone of degeneration about one-half inch deep. Rest of the muscle soft and easily torn.

At the same point on opposite sides of the diaphragm, the pericardium and reticulum were firmly adherent. A fine probe could be passed from the inside of the pericardium into a small canal in this adhesion, but not through it, because the reticular end was closed. The foreign body was not discovered.

The peculiar points of interest attached to this case are: (1) The course was acute, but unaccompanied by evidence of pain, and (2) Digitalis (Flu. Ext. Mins. XX.T.I.D.) seems to have exerted a slightly beneficial effect.

ALFRED SAVAGE,
Macdonald College, Quebec, Canada.

ACUTE METRITIS FOLLOWING PARTUITION

I was called by a farmer to attend a cow five years old, being informed by the owner that the animal was off her feed and strained considerably. He opined that she was suffering from some kidney affection.

On my arrival I found a cow in good condition, and on inquiry the following history was obtained: Seven days previously the cow had calved, but did not clean well. The symptoms were those of straining, constipation, anorexia and an anxious expression. The temperature was 103.5 degrees; pulse rapid and quite strong; quivering was also noticed. Vaginal examination revealed purulent material with an offensive odor. Examination of the uterus per rectum was then made and found to be in an unhealthy condition. After a little massage a quantity of purulent material escaped via the os uteri and vagina. A diagnosis of acute metritis was given. My prognosis was withheld until further developments.

The treatment adopted was as follows: The uterus was carefully massaged per rectum and all possible material pressed from it The vagina was then cleansed by an injection of weak creolin solution. Following this an ounce capsule of boracic acid powder was placed into the uterus. To overcome the symptoms of constipation one pound of magnesium sulphate was administered. The animal was then blanketed and the owner instructed to feed anything the animal would eat. A stimulant containing nux vomica was left to be administered.

The following day the symptoms were much as before, except that the bowels were functioning better and the appetite improved. The vagina was flushed out after massaging the uterus, and another ounce capsule placed into it.

Next day the animal showed marked improvement. The anxious expression was gone, the temperature reduced to 102.5 degrees, and pulse nearly normal. During the massage of the uterus, which was again carried out, a large piece of decayed placenta was pressed out. This treatment was continued on three consecutive days, at the end of which period the affected genitals appeared normal.

In my experience of this condition I have always found it advisable to avoid dilating the os uteri by force, as if done there always follow severe inflammation and much swelling. Another point in which my procedure differs from other practitioners is in the use of antiseptics in the pulverized form. It has been my experience, however, that liquid antiseptics used to flush out the uterus cannot all be siphoned off, and remains in the uterus, merely diluting the putrid matter there. A post mortem examination of two cases treated in this manner corroborates this statement.

H. J. DAVIS, Aylmer, Ont.

TREATMENT OF AZOTURIA IN THE EARLY STAGE

A very urgent call was sent me to see a horse. From the information, I gathered that the owner began to drive from his home, but after travelling half a mile at a good pace the animal suddenly showed signs of lameness. An examination of the feet was made, but nothing causing the lameness could be found. On being started again the horse went sound for a minute or so, but the lameness soon returned with greater intensity. Wisely he turned the animal and reached his stable with difficulty. At this time evidence of great pain, a profuse sweating and attempts at lying down were apparent. Over the phone I advised the owner to keep the animal on its feet until my arrival.

Some time later when I reached the scene, the chief symptoms were sweating, lameness in the hind limbs, rigidity of the muscles of the loins and a look of

fear. The craving to lie down however was not apparent. Five grains of morphine were administered hypodermically, which lessened the nervous attitude. After taking all surgical precautions I bled the animal taking away seven to eight quarts, after which the animal appeared much relieved. A physic ball was then administered and diuretics and a stimulant left to be administered. After blanketing the animal I instructed the owner to feed bran mashes and a very small quantity of whole oats, good hay, and keep absolutely quiet.

From information I received next morning the patient had much improved, the muscles over the loins were normal, no stiffness being present. Four days after the attack the animal was at work. I have treated another case of azoturia in a similar manner with the same results, and believe it a wise procedure.

H. J. DAVIS, Aylmer, Ont.

A SUGGESTED ADDITION TO DR. THOMPSON'S TREATMENT FOR EVERSION OF THE UTERUS APPEARING IN THE LAST NUMBER OF THE C.V.R.

Re Dr. Thompson's case report "Eversion Os Uteri," I trust he will pardon me for offering a suggestion to his already good technique, I think if he tries it he will find it of value.

When about to return the uterus, inject into the juglar vein twelve ounces of normal saline containing one and a half ounces of choral hydrate. This gives almost perfect anesthesia, only necessitating a few inhalations of chloroform to complete the condition. The uterus could then be returned with less effort by the operator and the animal would be kept quiet for several hours after the operation, which I consider of vital importance.

I have been using chloral for two years and find it very good for anesthesia. One must be careful , however, to place it all in the veins otherwise abscess formation and sloughing will surely follow.

Trusting that the doctor will accept this suggestion in the spirit in which it has been given and give it a trial.

C. C. MacLEAN, V.S.,
Stroughton, Sask.

UNUSUAL LOCATION OF OESTRUS EQUI

In carrying out a post-mortem, on the 12th December, 1920, on a horse which had been artificially infected with Dourine, two bots were found attached to the external surface of the stomach wall, near the point of entrance of the oesophagus. The area where these two larvae were located showed inflammation, over about two inches square, with formation of fibrous tissue. They were firmly adhered and there was no break in the stomach wall. Internally about one hundred bots were attached around the oesophageal opening; the food contens were entirely liquid. A considerable difference in the development of the larvae in the stomach was noticed and numerous eggs remained on the forelegs, in the usual location.

There would appear to be no doubt these two parasites had been located outside the stomach wall some time as the horse was killed in a moribund condition and the post-mortem was proceded with at once.

A. E. CAMERON, Lethbridge, Alta.

WAS THE DIAGNOSIS "DUMB RABIES" CORRECT?*

A somewhat misleading case of what I diagnosed as Dumb Rabies occurred in a Scotch collie bitch. The history gathered was that the animal was purchased from a pound in Saskatoon, Sask., about twenty-one days before I examined the animal. I also learned from the owner that she had been a nice bright, friendly dog ever since being rescued from the pound, until a few days previous, when she had appeared dull, would not eat, and kept "gradually getting worse."

On examination I found the following symptoms: Temperature 103 degrees Fahrenheit; pulse 120 per minute; pupils of the eyes dilated; conjunctiva reddened; the lower jaw was hanging and paralysed; ptyalism was evident and the saliva adhered to the hair around the mouth. Fright was a pronounced symptom and she would lie down and get up at short sudden intervals. The gait was staggery and her hind parts appeared to be becoming paralysed. When the hand was passed over the top of the head or along the back, a painful squeal would sometimes be emitted. There was no discharge from the nostrils.

Noticing the dog to be getting weaker, I advised the owner to leave her with me, as I was of the opinion she was suffering from Dumb Rabies. The animal was therefore placed in a kennel and closely observed. At 8 o'clock the same evening, complete paralysis had occured in the hind parts, and the urine was dribbling away from her. At this period she emitted long drawn out howls. Death occured at 1 a.m.

The head was removed, packed in ice and shipped to the Provincial Pathologist at Regina, accompanied with a description of the symptoms and history of the case. I also mentioned that I suspected the case to be Dumb Rabies.

In answer the following report was received:

"Upon removing the top of the skull, we found the hemispheres of the brain covered with thick pus. Two drachms or more of pus were contained in the right side of the skull the pus surrounded not only the right hemisphere, but also the pons and the upper portion of the spinal cord. The origin of the pus could not be determined, though it would appear to have extended upward along the olfactory nerve from some of the nasal sinuses which were filled with pus.

Portions of the gray matter were examined for Negri bodies, but none were found. I am of the opinion that this dog suffered from a form of suppurative meningitis, which produced the symptoms thought by you due to rabies.

Endeavours were made to ascertain the nature of the organisms which had caused the accumulation of pus, but only a few large cocci of unrecognized species were found."

Other post-mortem findings were negative as regards any diseased conditions.

GORDON G. McDONALD, Assiniboia.

*Extract from paper read at O.V.C. Science Association.

AN UNUSUAL CASE OF DIARRHOEA

I was consulted early in November about a cow that had been suffering from Diarrhoea for several weeks. She along with about a dozen of others had been grazing for the greater part of the summer in an orchard, and when the apples, which were a large crop, became large enough or tasty enough the cows ate the fallen ones, and four began to scour. This for some time was not paid any particular attention to, but as it continued and inclined to become more severe, all the cows were shifted, and the four stabled. The change of food and a little treatment of the usual kind, soon had the desired result on three of the cows, they recovered and remained well. But the fourth grew worse, and treatment was continued, without results. The usual remedies for Diarrhoea were prescribed viz. Ol Lini, Tinct. Opii, Bismuth, Ac Carbol., Ferri Sulph., Chlorodyne, Aromatic Sulphuric Acid browned flour or starch gruel, linseed tea, etc., etc. and dry hay advised. Hygienic conditions were practically perfect and water was first class. On the various prescriptions used being first given, an improvement was noticed for a day or two then the scouring returned as bad or worse than before.

The cow's appetite remained good until about one week prior to death, only showing slight lack of relish for food at times. There was no fever, and pulse only showed increased frequency when weakness became noticeable. The feces were mostly very fluid, very dark in color and very fetid, during the whole course.

On my advice being asked I suggested creolin as a remedy. Col. Wilson being present related how horses under his charge in Belgium had been treated. These horses took Diarrhoea so severely that some would die in forty-eight hours or less, showing many indications of toxic poisoning, and the remedy prescribed for them was Creolin, four ounces in from twelve to 20 ounces of rum. After the adoption of this remedy no more died, but unfortunately Creolin and rum had little effect on the cow, though it was not given in four ounce doses. After this failed to cure; Cupri Sulph in half ounce doses twice daily was tried and four or six ounces were used altogether. About this time I had the opportunity of making a physical examination of the cow, and found the liver very much enlarged. I thought then that the Diarrhoea was due to some interference with the hepatic circulation, probably due to the presence of a large tumor, and that the case was hopeless.

The cow died about two weeks after my discovery of the enlarged liver.

On post mortem there were two tumors of a lipomatous nature in the omentum about the size of a goose egg and the liver was easily double the normal size, of a very pale color, and very friable. On section the color varied none, being of a pale reddish brown color throughout and the knife used to cut it was coated with grease.

On microscopical examination the liver cells were transformed entirely into fat, "fatty degeneration."

We could discover no irritant weeds in the pasture "orchard," and the water was perfect, therefore it is a question whether the eating of the green apples was the cause of the disease of the liver or not. Degeneration of the liver cells is caused by irritating materials in the portal blood.

The feces were carefully examined microscopically for T.B. or other bacteria which might be a cause of the disease but without result.

The cow was a valuable one and everything was done for her in the way of treatment that was possible.

JOHN N. PRINGLE.
M.R.C.V.S., B.V.Sc.

AN UNUSUAL CASE OF RUPTURED STOMACH

An ordinary aged draught horse belonging to a contractor was noticed sick in the morning, refused breakfast, so was not sent to work. About 10.30 a.m. the owner came back to the stable and telephoned for me. I was at his stable in about ten minutes, and found horse standing quiet, pulse 120 per minute, small, irregular, and compressible. Temp. 103-2, slight sweating, mucous membranes intensely reddened, with a slight yellowish tinge, extremities cold, respirations very rapid, and of a sighing character. I suspected a rupture of stomach or bowel, in spite of the fact that there was no signs of horse having done any rolling around, as if he had been severely colicked, nor any history of his having done so, I gave a dose of Ammon. Carb. etc. and a half grain of strychinine. At 1 p.m. horse was much worse, sweating more, pulse almost imperceptible, very anxious expression, mucous membranes a deeper red than previously, respirations much worse, more rapid and much more of a sighing character. On backing him out of the stall he staggered and seemed somewhat stupid and seemed to have lost the power of co-ordination over his movements to a considerable degree.

I got him with difficulty out into the yard where he staggared around going over any obstacle that happened into his way, viz. a wheelbarrow, a heap of stones, etc., shortly afterwards he placed himself against the wall of the stable and sank slowly to the ground, hind quarters first. Being in a bad place for loading on to the dead wagon, the owner asked me if he could get up. I said we can try, and did so by getting him to his feet with considerable difficulty, then he could not or would not go forward, only backward. After he made a few staggering attempts to move then went down hind end first and almost turned over backwards. As there was no hope of recovery he was killed.

During this time the breathing became very labored and difficult, of a char-

acteristic sighing character, resembling acute rupture of diaphragm, there was very slight tympany only during the whole period of his sickness. Post mortem revealed a tear in the gastric wall about 6 inches long, very little ingesta was intermixed with the abdominal organs, and there was no apparent cause for the rupture, the wall of the stomach was apparently healthy.

No ulceration could be discovered nor parasites. We made a very careful examination of the gastric wall and contents, also of the abdominal cavity, and could find no cause for the rupture. No anatomical alteration could be discovered in the gastric wall by a microscopic examination nor was peritonitis present.

This case appears too improbable for publication yet the truth will bear telling. How is it that the horse showed no colicky pains at any time? And how is it that the stomach ruptured without any apparent reason? e.g. tympany, eructating, or emesis, and when did the rupture take place? The post mortem proved that it was an antemortem rupture.

J. N. PRINGLE,
M.R.C.V.S., B.V.Sc.

EVERSION OF THE UTERUS

On March 2nd, 1920 I was called to treat a black grade Angus cow, three years old, with an everted uterus. On my arrival the organ was found to be dry and dark in color and attempts to make the animal rise were unsuccessful. I gave an unfavorable prognosis, but hoping for the best administered treatment as follows:—

After giving a quarter of a grain of Lobeline Sulphate hypodermically, cleansed with water containing Permanganate of Potash. This was followed by a liberal application of Mineral Oil containing 2 per cent. Phenol. The hind quarters were raised off the ground by means of sacks filled with straw. This I have also found of great assistance in treating difficult cases of Parturition, when changing the position of the fetus.

The uterus was then replaced in the pelvic cavity, by manipulation and massage; but I had to remain with the animal for nearly an hour before straining ceased. Meanwhile another quarter grain dose of Lobeline Sulphate was administerd, and after straining had ceased the vulva was sutured to hold the organ in place. After giving another dose of Lobeline I had her blanketed and left vux vomica to be given her in one and a half drachm doses three or four times a day. After being recumbent for a week, she got up of her own accord and was eventually fattened for the block.

I merely mention this case to show that cattle often appear in very bad condition and yet with a reasonable amount of care and treatment they will often recover, where in the case of other animals death would be the result.

W. L. BOLIN, Bolivar, Mo.

ASSOCIATION NEWS

THE ONTARIO VETERINARY ASSOCIATION

A general meeting of the Ontario Veterinary Association was held at the Ontario Veterinary College on February 16th and 17th. Although the attendance was smaller than at the annual meeting, the different parts of Ontario were well represented, justifying the holding of semi-annual instead of yearly conventions.

The meeting convened in the assembly hall at 10 a.m., the President, Dr. J. A. Campbell, presiding. An address of welcome was given by the Hon. Manning Doherty, Minister of Agriculture, in which he expressed appreciation of the progress made by the Association and of the work done by Dr. McGilvray in the college. In speaking of the Veterinary Science Practice Act he pointed out the added responsibilities of the Veterinarian who, he said, had a distinct advantage over the recently licensed non-graduate, an advantage which should be exercised in a proper manner and good spirit. As a live-stock man, Mr. Doherty stated that he was and always would be interested in the veterinary profession, and would always try to support everything advanced for the good of veterinarians in Ontario.

An able response to this address was delivered by Dr. J. G. Rutherford, C.M.G., of the Board of Railway Commissioners. He spoke of the aid veterinarians are to the live-stock industry, our greatest national asset. He stated that it was forty-two years since he graduated from the O.V.C. and mentioned many important changes that had taken place in the profession since that time.

Letters were then read from the following regretting their inability to be present and expressing wishes that the meeting would in every way be successful:

Dr. S. F. Tolmie, Federal Minister of Agriculture; Dr. F. Torrance, Veterinary Director-General; Dr. Geo. Hilton, Chief Veterinary Inspector, Health of Animals Brand; Dr. Hastings, Medical Officer of Health, Toronto; Dr. E. A. A. Grange.

It was then moved, seconded, and carried that the meeting adjourn until 2.00 p.m.

The afternoon session opened with a discussion on the Veterinary Science Practice Act. Dr. McGilvray was the first speaker, and fully explained all that had been done in connection with the registration of non-graduates. He said that the members of the Board had thoroughly investigated every application, and no certificate was granted until the Board was satisfied that the man was entitled to it according to the provisions of the Act. Others taking part in the discussion were Dr. Hutton of Welland, Dr. Caley of Bracebridge, Dr. Kelly of Orillia, Dr. Fowler of Toronto, Dr. Short of Erin, Dr. Watson and Dr. Rutherford. It was moved by Dr. Wilson, seconded by Dr. Culp and unamimously carried that the Association pass a resolution giving its confidence to the members of the Board who have done everything in their power on behalf of the Veterinary profession.

A letter received by the Secretary from Dr. Geo. Hilton was read. In this letter Dr. Hilton suggested that as non-graduates who had been habitually practising in Ontario for five years or more were now recognized the Associations should invite them to their meetings, and let them take part in the discussions. He also suggested that they be invited to become associate members. Moved by Dr. Caley, seconded by Dr. Dunn that this letter be placed on the table.

The next item on the programme was a discussion on the advancement and support of the Canadian Veterinary Record. The editor, Col. T. C. Evans, addressed the meeting, explaining the necessity of an increased subscription list.

Before proceeding with the symposium on Contagius Abortion and Sterility, Dr. W. H. Moffatt of the V.V.M. laboratories was invited to address the meeting and explain the nature of his preparation, V.V.M. which he is distributing as a cure and preventative of Contagious Abortion. Dr. Moffatt stated that he was not there to discuss V.V.M. as regards its composition, but merely to tell of the effects of its administration in herds where Contagious Abortion had occurred, and that he did not want any judgment passed at this meeting regarding the efficacy of the product. Dr. Moffatt, in reading his paper asked for the assurance of the meeting that his address would not be considered as any test of V.V.M. merits, and that no decision be given on it. He further stated that he was willing to give the product to veterinary surgeons, or anyone in authority, for a fair trial. Considerable discussion ensued in which Dr. Batt, Dr. Gwatkin, Dr. Watson, Dr. McGilvray, Col. Mundhenk, Dr. Law, Dr. Rutherford, and others took part. The general impression created by Dr. Moffatt's paper and discussion was that V.V.M. had not been proven a cure or preventative of Contagious Abortion.

Dr. R. A. McIntosh was then called upon to address the meeting on Sterility. His address dealing principally with the physiological features and treatment of the disease was greatly appreciated.

Dr. H. E. Batt spoke on the physiology of the corpus luteum.

The meeting adjourned at 6.15 p.m.

At 7.30 p.m. a banquet was held at the Walker House hotel, at which about 46 were present. After an enjoyable dinner, accompanied by selections on the piano, Dr. Rutherford was the first called upon to speak. His address was witty and interesting, dealing largely with his experiences when he first graduated and practised in Indiana, N.Y. state., Mexico, and Western Canada.

The next speaker was Dr. J. A. Amyot, Deputy Minister of Health for the Dominion, and an honorary member of the Association. Dr. Amyot pointed out the importance of the veterinarians' work in caring for the live-stock of the country. He also spoke on food values, dealing principally with milk.

Dr. Barnes, Chief Inspector, Meat and Canned Foods Act, next gave an address. He suggested the advisability of the amalgamation of the different Veterinary Associations in Ontario. He referred to the inspection of meat and food products, and stated that during the war Great Britain kept a record of all complaints concerning food products received from Canada and other countries. It was gratifying to hear that in this connection not a single complaint was registered against the Canadian Food Inspection Service.

Dr. Forsyth was then called upon to render a song. He sang "Roamin' in the Gloamin'" and an encore "A wee doch and doris," which were greatly appreciated.

The next speaker was Dr. C. D. McGilvray, who gave an outline of the course now being given at the O.V.C. He stated that although the number of students attending was not so great as he would like to see, the standard of character of the men left little to be desired.

Col. R. L. Mundhenk, of the Abbott Laboratories was then asked to say a few words. He appreciated the privelege of being at the meeting, and had pleasant memories of association with wearers of the Maple Leaf while in France during the late war.

An enjoyable evening came to a close about 11.30.

The morning session on Thursday commenced about 10.00 o'clock, with a demonstration of the casting and restraint of horses, by Dr. D. R. Caley.

Dr. W. J. R. Fowler performed the radical operation for Poll evil and Dr. J. W. Porter performed a cryptorchidectomy, assisted by Drs. McIntosh and Collet. Both operators thoroughly explained their technique to the interested audience.

The meeting then adjourned to the lecture room, and Dr. J. B. Hollingsworth, Chief Food Inspector of Ottawa, gave a very interesting paper on "Better Dairy Cows." He referred to the great opportunity for the veterinarian in advising dairy farmers as to the kind of cows to keep. "It has been said," remarker Dr. Hollingsworth, "that 50 per cent. of the cows are kept at loss, 25 per cent. are just paying for their keep, and any money that is made is out of the other 25 per cent."

The next paper was on "Sterility in Cows," by Dr. J. N. Pringle, who has had considerable experience in this line. He went into the disease very fully both as to cause and treatment of the various conditions connected with it.

An excellent anatomical demonstration on the horse and cow had been arranged by Dr. H. D. Nelson, and it is deeply regretted that owing to lack of time the demonstration had to be cancelled.

The meeting adjourned about 1.00 p.m. and the afternoon session commenced at 2.00 p.m.

Arrangements had been made for representatives of various biological houses to address the meeting, stating the policy of their firms in dealing with veterinarians.

The first speaker was Mr. I. S. Stimmel of the H. K. Mulford Company who read a paper entitled "The H. K. Mulford Company in the Veterinary Field." This well prepared and well read paper convinced the meeting of the honest manner in which this company distributes its products.

Col. R. L. Mundhenk, representing the Abbott Laboratories was next called upon to speak. He thanked the Association for allowing him to come and state the policy of the Abbott Laboratories towards the veterinarian, assuring them that this firm did not sell their preparations to the laity. Col. Mundhenk read a very interesting paper dealing with the idea that there is a tendency growing within us to make things more difficult and complex than they actually are. This paper will be published in a future number of the C.V.R.

Dr. McGilvray thanked Mr. Stimmel and Col. Mundhenk for their papers, remarking that a biological or pharmaceutical firm could usually be judged by the men they employed as their representatives.

A representative from Parke, Davis, and Company then made a few remarks regarding his firm. He stated that this company sell only to Veterinarians, the medical profession, and druggists, and that when asked by stockmen for remedies, etc., tell them to procure the same through their veterinarian or druggist.

Dr. Chas. Higgins of the Lederle Antitoxin Laboratories wrote a letter regretting his inability to be present, and assuring the Association of the policy of this firm in selling veterinary remedies and preventatives to veterinarians only. A representative of this company also made a few remarks to the meeting.

An illustrated address "Standardization of Drugs," was then given by Dr. A. R. Fader, of the Parke, Davis, Company. This interesting address dealt with the procuring of plants for drugs from different parts of the world up to the final process of standardization.

Dr. A. Savage, of Macdonald College, Quebec, read an interesting and instructive paper on "Anaesthesia in General Practice," which will be published later in the C.V.R. Considerable discussion followed, chiefly concerning the intravenous administration of Chloral Hydrate, in which Dr. Fowler, Dr. Nelson, and Dr. Dunn took part.

The last paper was read by Col. J. H. Wilson, of London, on "Veterinary Ethics." Although short the paper contained some excellent ideas. At the end of his address Col. Wilson made a motion, seconded by Dr. McGilvray and unamimously carried that a committee be appointed to draft a code of ethics for this Association, to be presented at the general meeting.

The late Dr. Milnes' books and instruments were then put up for auction, Dr. Savage being appointed auctioneer. One hundred and one dollars and thirty-

five cents were realized, which was considered a fair price for the rather small amount of articles sent in to be sold.

The meeting came to an end about 6.00 p.m. and the Association wishes to extend hearty thanks to Dr. McGilvray and the staff of the O.V.C. for the courteous treatment given to members attending the meeting; also to Mr. Harold Owen for taking down detailed account of the proceedings.

Since the August, 1920 meeting six new members have joined the Association. The number of paid-up members is now one hundred and twenty-seven.

J. S. GLOVER, Secretary.

SASKATCHEWAN VETERINARY ASSOCIATION

Report of the Annual Meeting of the Veterinary Association of Saskatchewan, 1920

The annual meeting of the Veterinary Association of Sasktchewan was held at the University of Saskatchewan, Saskatoon, Sask., August 10-11-12, 1920.

The meeting was called to order at 9.00 a.m. on the 10 inst., by the President, Dr. S. J. Gibson, Govan.

The first day of the meeting was devoted to the general business of the Association, and to make preparations for the clinic to be held on the 11th and 12th inst. respectively.

During the course of this meeting the Secretary pointed out to the meeting that under the provisions of By-law No. 12 "That any duly qualified veterinary surgeon who had rendered valuable services to this association or to the veterinary profession in general may by a two third majority vote, be elected an Honorary Associate." And in connection with this the Secretary mentioned the name of Dr. C. D. McGilvray. It was moved by Dr. M. P. McClellan, A. B. Gibson, and carried unamimously that Dr. C. D. McGilvray be elected an Honorary Associate of this Association.

Another item of passing interest which may be noted and that is "That this Association join the Western Live Stock Union as an organization."

The tariff of fees was revised to meet present day cost of supplies, etc.

Dean Rutherford addressed the meeting at some length on the subject of "Animal Husbandry,"

Dr. M. M. Seymour, Commissioner of Public Health, Province of Saskatchewan, addressed the meeting on the subject "The Veterinarian and the Public Health," among other points of interest he mentioned the good work being performed by veterinarians attached in Departments of Public Health in the cities of the Province, and he hoped at an early date to have a veterinarian attached permantently to the staff of the Bureau of Public Health.

The following days August 11th and 12th were devoted to the clinic which was in charge of Dr. D. R. Caley, Bracebridge, Ont., formerly Professor of Surgery, Ontario Veterinary College, Toronto.

Committees: Restraint—Chairman, Dr. Head. Anesthetics—Dr. Hewitt. Chairman, Surgical Supplies, Dr. Wright. Assistant to Dr. Caley, Dr. R. G. Gray.

The following operations were performed by Dr. Caley accompanied by a unique and interesting demonstration of the surgical technique and anatomy:

"Paraphymosis." "Fistulous Withers." Ventral Hernia." Repulsion of upper third molar and lower first molar.

Dr. Caley also demonstrated his method for the relief of "hard milkers" on a Holstein milch cow from the dairy of the University.

Dr. Norman Wright demonstrated the use of Chloral Hydrate as a general anesthetic by the intravenous route. In connection with this it may be of interest to say that profound anesthesia was obtained in a comparatively short time, but the after effects were anything but satisfactory.

Dr. M. P. McClellan, Provincial Veterinarian, interspersed the surgical features of the clinic with an address, "Hemorrhagic Septicemia," giving in detail his clinical experience with this disease during the recent outbreak in this Province.

Mr. Hedley Auld, Deputy Minister of Agriculture, Province of Saskatchewan, addressed the meeting, he said in part that he desired that there should be a closer co-operation between his department and the members of the Veterinary profession in the Province, stating that the end in view would prove of mutual advantage. He stated further that his Department had under advisement a scheme for the eradication of Tuberculosis in the herds of the Province, and he hoped to have something important to say with regard to this important subject at an early date.

At the conclusion of the meeting a banquet was held at the King George Hotel, Dr. M. M. Seymour and Professor Shaw of the Faculty of the University of Saskatchewan were the guests of the evening. The retiring President, Dr. Gibson occupied the chair. The after dinner speeches were of too lengthy a nature to attempt to report, but we may conclude by saying they were of the nature "par excellence."

Officers elected for the following year as follows:—

Dr. J. M. Fawcett, Regina, President; Dr. M. P. McClellan, Regina, Vice-President; Dr. R. G. Chasmar, Hanley, Sec.-Treasurer, and Registrar. Council: Dr. H. Richars, Indian Head; Dr. S. J. Gibson, Govan.

R. G. CHASMAR, Sec.-Treas. and Registrar.

CENTRAL CANADA VETERINARY ASSOCIATION

The Eighteenth Annual Meeting of the Central Canada Veterinary Association was held in the Council Chamber, City Hall, Ottawa, on January 14th, 1921.

The morning session opened at 10 a.m. with a very meager attendance, due to the irregular train service from many points.

The President, Dr. Hilton called the meeting to order and the general business such as the reading of the Minutes, election of Officers, initiation of new members, etc. was proceeded with. The new members placed in good standing were: Drs. Weaver, Mitchell and Gallivan, Biological Laboratory, Ottawa; Dr. W. F. Clark, Carleton Place, Ont.; Dr. R. S. Abraham, Finch, Ont.; Dr. J. O. Major, Mont Laurier, Que.

Letters of regret for enforced absence were received from many members including Dr. W. J. R. Fowler, Toronto, Ont., who was confined to his house through an accident; Dr. A. Savage, Macdonald College, Que.; Col. T. C. Evans, Stanley Barracks, Toronto, and others.

Dr. McGilvray favored the members with an address explaining certain features of the Veterinary Practice Act of Ontario, and gave an accounting of the stewardship to the Trustees for the Legislative Fund.

The afternoon session opened at 2.30 p.m. with a very fair attendance, when the following papers were read:—

Dr. Marriott Ottawa, "Tuberculin Testing." Dr. Watson, Chief of the Pathological Division, Health of Animals Branch; Dr. Perley, Hanover, New Hampshire, and others took an active part in the discussion of this subject. Dr. W. C. Young, Almonte, "Sterility of Cattle." Dr. N. M. Bellamy, Alexandria, "Azoturia."

The meeting adjourned at 6.30 p.m. to reassemble in the dining hall of the Daly Company, Ltd., where an informal dinner was held. Besides the regular members, the Association was honored by the presence of the following gentlemen at dinner:—

Dr. S. F. Tolmie, Federal Minister of Agriculture; Dr. J. G. Rutherford, C. M.G., Railway Commissioner; Dr. J. A. Amyot, Deputy Minister of Public Health; Dr. J. H. Grisdale, Deputy Minister of Agriculture; E. S. Archibald, B.A., B.S.A., Director of Experimental Farms; H. S. Arkell, B.S.A., Dominion Live Stock Commissioner; Mr. F. C. Elford, Dominion Poultry Husbandman; Rev. J. E. Lindsay, Ottawa; Dr. T. A. Lomar, Medical Health Officer, Ottawa; Dr. F. Torrance, Veterinary Director-General.

Short addresses were delivered by Dr. Tolmie, Dr. Rutherford, Dr. Amyot and Dr. Torrance and these togther with recitations, musical selections and vocal numbers added a fitting climax to a very successful and interesting meeting.

A telegram of sympathy was forwarded to Dr. Fowler expressing the goodwill of the members of the Association and their best wishes for a speedy restoration to good health.

The Officers for the ensuing year are as follows:—

Honorary Patron, Hon. S. F. Tolmie; Honorary President, Dr. F. Torrance; Hon. Vice- Presidents, Dr. J. G. Rutherford, C.M.G.; Dr. C. D. McGilvray; Dr. D. McAlpine, M.L.A.; President, Dr. George Hilton, Ottawa; Vice-President, J. A. Bean, Winchester, Ont.; Sec.-Treas., Dr. C. H. Weaver, Ottawa. Council; Drs. Barnes, Marriott, Sparks, Hall, Hollingsworth, Ottawa; Dr. P. W. O'Mara, Maxville, Ont.; Dr. J. C. Campbell, Wakefield, Que.; Dr. N. M. Bellamy, Alexandria, Ont.

THE MANITOBA VETERINARY ASSOCIATION

The above Association held its annual meeting on the 15th of February in Winnipeg, which as usual was well attended. The following Officers for the ensuing year were elected:—

President, Dr. F. W. Bryant, Dauphin; Vice-President, Dr. J. S. Mack, Neepawa; Secretary-Treasurer, Dr. J. B. Still, Winnipeg. Council: Dr. J. B. Still, Dr. J. A. Munn, Dr. Wm. Hilton, Dr. F. Bryant, Dr. J. S. Mack, Dr. H. R. McEwen and Dr. W. H. Lee.

By resolution the Association approved of the action of its council in recommending that the amount of liquor to an individual veterinarian be reduced to three gallons per week, this being considered sufficient for the requirements of the average practice. Dr. Munn, the retiring president, referred in his address to the improvement in the course of instruction at the Ontario Veterinary College under the Principalship of Dr. C. D. McGilvray.

At the dinner held in the Royal Alexandria Hotel as a fitting climax of the successful session, Dr. F. Torrance, Veterinary Director-General, was the chief speaker and outlined the work carried out by his Department to stamp out tuberculosis from the herds of Canada. He thought it was not a question merely of economical loss to the live-stock owner but concerned the public in general, since twenty-five per cent. of children who die from tuberculosis, died by contracting the disease through drinking milk of affected cows.

The growth of accredited herds, he pointed out, was increasing in the United States, and he declared that it was realized that unless Canada took similar steps, the time was coming when that market would be closed to Canadian breeders. Steps in this scheme were taken last Fall and the scheme had been in effect in the Dominion a little over a year. The department, he stated, was receiving the heartiest co-operation from the owners of live-stock and up to last week 379 herds had been tested.

The Department, said Dr. Torrance hoped to be able to get the assistance of the general practitioner in this work of testing and it was proposed to have a list of

veterinarians throughout the country qualified for the service. With this object in view an examination would be held in Winnipeg on March 15. By these, practitioners' tests would be conducted for live-stock owers at the owner's expense.

Incidentally Dr. Torrance mentioned, commenting upon some observations regarding the establishment of a laboratory in Manitoba, that is might be possible to utilize the equipment of the Manitoba Agricultural College for such purpose until the federal authorities considered they were in a position to supply the funds for the institution.

President John Bracken of the Manitoba Agricultural College spoke on the relation of Veterinary science to agriculture. Short addresses were also delivered by Dr. A. G. Husband, of Belmont; Major S. Robinson, Brandon; Dr. J. McLeish, District Supervisor Federal Meat Division; Dr. W. A. Shoults, Winnipeg, and Dr. J. A. Stevenson, Winnipeg.

The proceedings during the evening session were varied with a musical programme excellently supplied by A. Gaunt, S. Banks, and R. A. Richardson, piano.

The council of the Veterinary association of Manitoba at a meeting held December 22nd, 1920, in the office of the secretary, 711 Boyd building, decided to ask the liquor license department to reduce the amount of liquor allowed for use by a veterinary surgeon to less than half the amount provided under the new act which comes into effect next month.

Members of the council; President, Dr. J. A. Munn, Carman; vice-president, Dr. J. S. Mack, Neepawa; Dr. W. Hilton, Winnipeg; Dr. H. R. McEwen, Stonewall; Dr. J. B. Bryant, Dauphin, and Dr. J. B. Still, Winnipeg, secretary-treasurer and registrar.

B.C. VETERINARY ASSOCIATION

Meat Inspection and its Relation to Public Health

That there was no meat inspection in this city except for meats going out from abattoirs doing export business, was the statement of Dr. Damman, of Vancouver, in his talk on "Meat Inspection and its Necessity," before the members of the Women's Educational Club. This talk was given under the auspices of the B. C. Veterinary Association at the home of Mr. and Mrs. G. Small, Third Avenue.

Dr. Damman, in speaking of the necessity for inspection, stated the people did not understand the great need of having meats inspected to guard the health of the public and that the veterinary association felt that once the public understood the great danger of consuming diseased meats, a much more thorough system of dealing with this question would be insisted upon.

Before meat was sold to foreign countries it must be inspected, stated the speaker, while people in the immediate districts ate meat that was never inspected, and meats, unmarketable, diseasesd, and otherwise unsound, had been sold at the local markets. On further discussing the reason for meat inspection, Dr. Damman pointed out that the white plague was the most dangerous of all diseases.

A number of lantern slides illustrating how the various diseases among animals affect the meats were shown by Dr. J. G. Jervis, of Milner, a former Dominion meat inspector.

Dr. K. Chester, who was in attendance, pointed out to the gathering that provision was made, either by the Municipal Act or by the Public Health Act of each Province for establishment and carrying on of municipal meat inspection, and that this leglisation up to now, in a great many cases, had been very ineffectively enforced, or remained a dead letter.

Among the gathering were several members of the B. C. Veterinary Association.—(Reprint from Vancouver Sun).

COLLEGE NOTES

Athletics.

It would appear that the students at the O.V.C. are in a much lower physical catergory than other Faculties of the U. of T. by the showing made by them at the inter-faculty meet. R. S. Foster being the only participant anywhere approaching the present day standard of the University.

At first one might be tempted to think that this dearth of athletes is due to the size of our faculty, and perhaps does account for it to some extent. The real cause, however, lies in the fact that our would-be athletes ignore any attempt at training. It is recognized on every hand that to be proficient in the athletic field, intensive training must be undergone, since athletics like every branch of work in the civilized world demands specialization.

It therefore seems a great pity that the students as a whole are not taking advantage of the facilities offered at Hart House, to improve their physical condition, and perhaps repeat what Foster did at the Intercollegiate meet held October 29th, 1920. Regarding field honors this was a red-letter day for the O.V.C., being the first time in our annals that any member of this faculty was declared the Individual Champion of such a meet. Our enthusiasm, however, was somewhat dampened by McGill taking away the honors in the aggregate.

Our own Field Day could hardly be called a howling success, as the weather man was anything but nice, corroborated by the statement of the Oracle, as depicted by our artist, but was all that could be expected under such adverse conditions.

As was expected, R. S. Foster easily recorded the greatest number of points. Cowie, however, made a good showing and surprised both Foster and himself, and incidentally the spectators, by registering first place in the Hop-Step-and-Jump.

A few of the more virile of the Faculty braved the weather conditions, and graced the meet with their presence, but for the most part nursed the stove in the dressing-room. The entries in the Faculty Race, which is always an attractive feature, was perforce reduced to two, the long and short of that worthy body. The Long One, Dr. Nelson, according to precedent toddled in an easy first, this performance having become quite a habit. A curious incident that followed this win was on the occasion of the distribution of the prizes, when Dr. Nelson in the excitement of the function was given the gold prize, won by Foster as Individual Champion of the meet. He was, however, prevailed upon to release it for the more appreciable recognition of his athletic powers, in the shape of a box of cigars. We have it on good authority, that any studious youth entering the library during the following few days, did so at the risk of contracting a severe bronchitis, except he wore a gas mask. The freshmen having not had the facilities for converting their muscle into gray matter, won the the Tug-o'-War Shield, thus keeping up the record of former freshmen. Alas! their downfall is near.

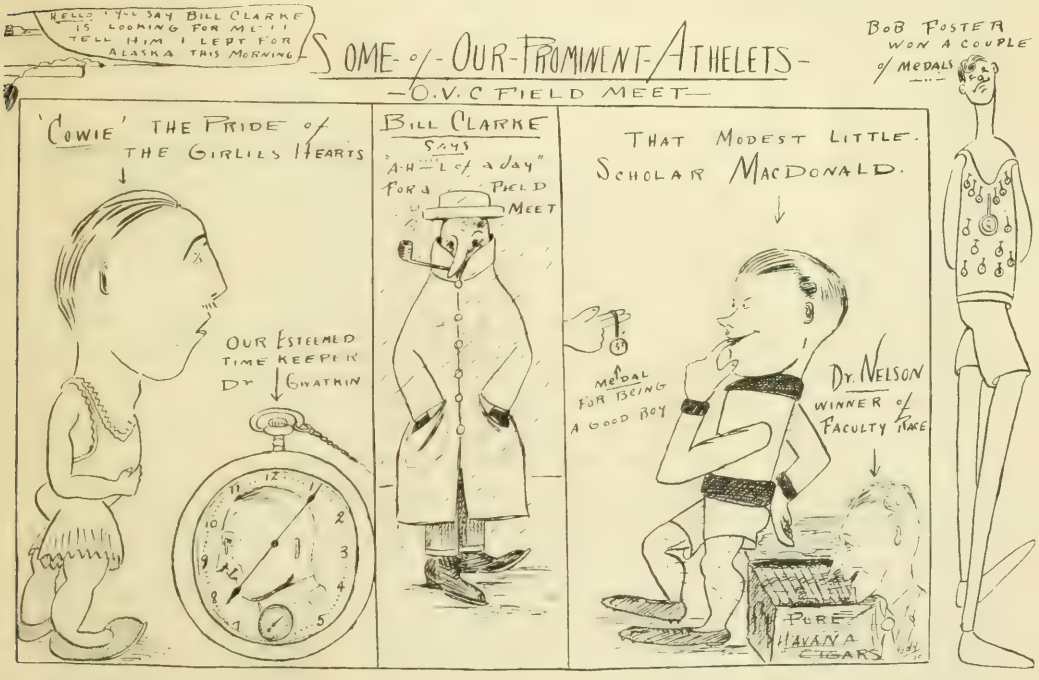
The prize winners were as follows:—

Foster, six firsts and one second, totalling thirty-three points. Cowie, three firsts, two seconds and a third, with twenty-two points. Coulter, three seconds, points nine. C. G. McDonald, one first and three thirds, with eight points. Ormiston, one second and a third, with four points. Rookes, Roe and Slack, each with one second and three points. Campbell with three thirds and

three points. Lawson and Booth with one point each. As at the previous meet the senior year was beaten by one point in the aggregate for the class shield, by the junior year.

Soccer.

The soccer club could not lay claim to any pronounced success, and the reason is not hard to discover, being a late start, along with little or no training. For the future welfare of this branch of sport we offer the following suggestions: Before the end of the present term, that the President of the O.V. C.A.A. call a meeting of the enthusiast in this particular branch and have officers elected for the coming academic year, with the idea of getting started, as soon as possible next Fall.


HELLO! YOU SAY BILL CLARKE IS LOOKING FOR ME!! TELL HIM I LEPT FOR ALASKA THIS MORNING
SOME-of-OUR-PROMINENT-ATHELETS-
—O.V.C FIELD MEET—
BOB FOSTER WON A COUPLE of MEDALS
'COWIE' THE PRIDE of THE GIRLIES HEARTS
OUR ESTEEMED TIME KEEPER Dr GWATHIN
BILL CLARKE SAYS "A-H—L of a day" FOR a FIELD MEET
THAT MODEST LITTLE SCHOLAR MACDONALD.
MEDAL FOR BEING A GOOD BOY
Dr. NELSON WINNER of FACULTY RAKE
PURE HAVANA CIGARS

The actual activities of the club consisted of one match against Dentistry. The first half of the game was not a disgrace to the players on our team although the Dents scored twice. The second half was a débacle, due to the lack of form. We draw the curtain through courtesy to the members of the team.

Hockey.

We, after the soccer disaster, allayed our feelings with what the hockey team hoped to accomplish, but the weather combining with other unforeseen circumstances, did not make it a hockey year for us. Cowie, who had been the mainstay of the team for the last three years, stood down in favor of his home town. (We admire his courage in admitting to the world that Markham was his birth place). Then our practice day always turned out to be fine—and warm, suitable

for water-polo, but certainly not hockey. In the midst of all this the sophomore year, who was expected to furnish half the team, obeying the law of the Medes and Persians, betook themselves to Guelph, to absorb the agrarian atmosphere, prevalent at the O.A.C. and unobtainable at University Ave., but necessary for a young veterinary student.

There are several garbled reports concerning a match that was eventually played with Victoria. From information supplied us, there is only one definite thing we can gather that did actually take place, and that was one goal scored against Vic. Regarding the number of goals scored by the opposing team, little can be said, due to the conflicting reports, but it is safe to say that the number exceeded more than one and was under fifty.

The match with Forestry, we understand was a closer thing, but fortunately the closeness was on our side with the result that we again registered defeat. The continued mild spell has made ice hockey impossible, with the result that our winter sportsmen have taken to other forms of sport, which vary from matching pennies to turning hand springs between classes.

Social Activities.

The year 1920-21 did not experience the amount of giddy gyrations as the two post-war years previous, and is either due to repletion or lack of the "root of all evil." Three dances were held before Xmas, and the freshmen gave theirs late in January. It is the concensus of opinion that the junior year surpassed all others, and kept up their reputation for lavishness, which a two-year course in economy did not seem much to lessen.

On the 17th of February the Fraternity, toatally ignoring the presence of His Satanic Highness in our midst, gave a very lavish affair, as regards music, having Jardines' seven piece orchestra in attendance, thereby ensuring, in the willowy waltz and frisky foxtrot, the correct nerve stimulation.

To counteract the ennui which is becoming apparent at these various class functions, not to speak of the strain on the pocket book, it would be perhaps wise to hold fewer dances, saw two college dances during the academic year, with a touch more of dignity to them. Another point that might be well worth touching is the patronage given by the Faculty to such functions. We are well aware that after a man attains a certain mental calibre, dancing ceases, as far as that particular individual is concerned, to be a recreation. Therefore, although we should be delighted to see the worthy members of our Faculty open and take a very active part in every dance at the College, we hardly expect it. As a college function however, we should like to see at least two representatives of the Faculty present at every dance, in spite of the fact that it may be of no more interest to them, than some of their lectures are to us. Moreover it would give the student an opportunity of meeting the Faculty on more equal terms than in the class-room, and would be a means of adding dignity to the function and excluding any possibility of objectionable behaviour.

The Science Association.

Thus far the Science Association has held eight meeings, at which twenty-eight papers were read, covering quite a variety of subjects, although by no means reaching into the ramifications of the profession. Complying with a motion that prominent men address us at these meetings, Dr. Fader of the Parke, Davis Co. has given two illustrated lectures, one on famous men, who distinuished themselves in both medical and veterinary research and the other on Tuberculin. The lectures have met with the approval of the members, and it is hoped that there will be more given before the end of the college year. By the courtesy of the Association, we publish a list of the papers read:—

Canker in the Foot of a Horse.—E. E. St. G. Pallett.
Therapeutical Notes.—W. S. Clarke.
Removal of a Calculus from the Urethra of a Gelding.—G. G. McDonald.
Removal of Osteo-Chrondroma from Nasal Chamber of Horse.—J. C. Phillips.
Equine Sterility and Artificial Impregnation.—F. C. Schmidt.
Actinomycosis.—A. D. Conley.
Gastric Impaction.—G. F. Reid.
Professional Ethics.—T. G. Sprague.
The Veterinary Practice Act.—W. S. Clarke.
Difficulties of a Practitioner in Dealing with his Clients.—N. L. Gray.
Feline Catarrhal Fever.—E. E. St. G. Pallett.
Pioneers of Medicine.—Dr. Fader.
Veterinary Science.—R. H. B. Wheatley.
Purpura Haemorrhagica.—L. M. Heath.
Sterility.—T. J. Coulter.
Dumb Rabies.—G. G. McDonald.
Civil Service and Public Health.—J. W. Naismith.
Horse Training.—W. L. Bolin.
Quittor.—A. Stobart.
Belladonna.—G. B. Senior.
Azoturia.—E. D. Wright.
Cases of Interest.—R. H. B. Wheatley.
Rupture of the Prepublic Tendon.—J. C. Phillips.
Tetanus.—R. G. Cowie.
Black Leg Outbreaks as seen in Saskatchewan.—N. L. Gray.
Choke in the Horse.—A. Stobart.
Disinfection.—G. F. Reid.
Anthrax in Cattle.—A. D. Conley.
Tuberculin.—Dr. Fader.

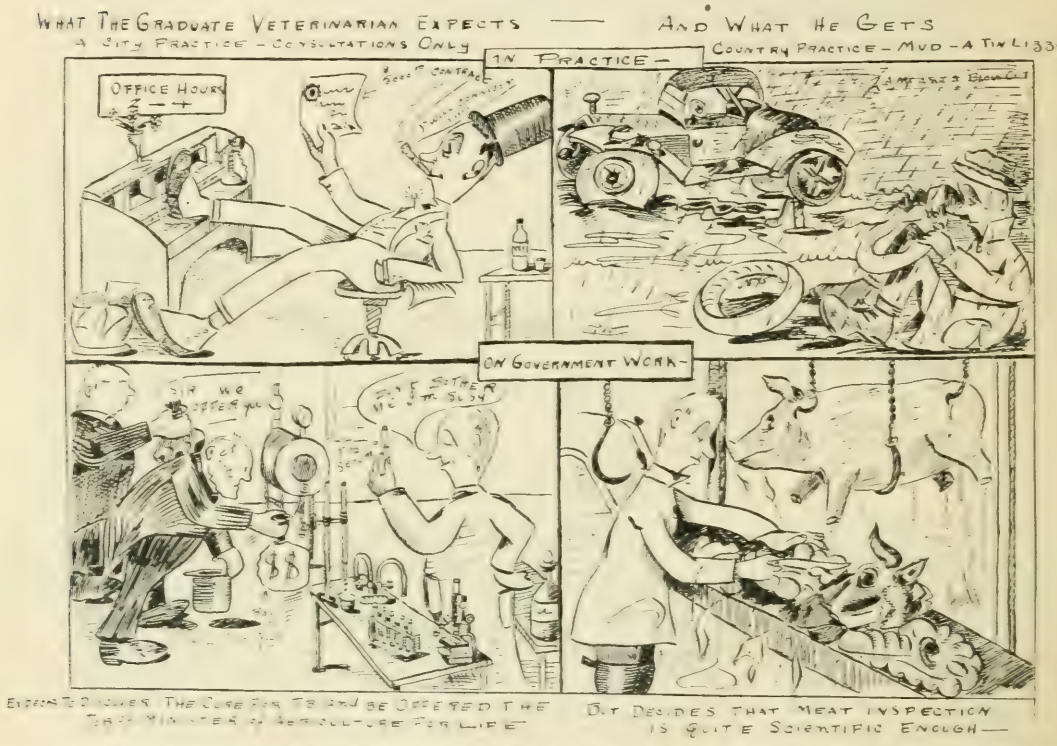
Dr. Frank Schofield at O.V.C.

On Friday February 11th, Dr. Frank Schofield, formerly of the faculty of the O.V.C., gave an address on Korea to a representative gathering of the students. In introducing the speaker, Dr. McGilvray mentioned the important work accomplished by Dr. Schofield while associated with the College in regards to researches made in Equine Abortion and Joint-ill of foals. Before entering the Missionary field, Dr. Schofield was connected with the Provincial Health Department. In 1915 however, he accepted a post as bacteriologist at the Union Medical College, Soeul, Korea, where he has since been doing much good among the natives.

In his lecture "Three Experiments in Korea" he vividly described the attitude of the Koreans, under Military regime, Modern Medicine and Christianity. He described briefly the history that lead up to the annexation of Korea by Japan, and pointed out that Japan had copied the methods of the Western hemisphere too closely, but fortunately had applied these methods in an Oriental manner. He was of the opinion that the last rebellion in Korea was due to this. In making a plea for the Koreans with the Japanese Government, one official pointed out to him England as an example of a large country assimilating a smaller as in the case of Scotland. As an Englishman, Dr Schofield said that he was very pleased to hear some one say so, but advised this misinformed individual to avoid mentioning the fact in the hearing of Scotchmen. He also cited an instance which occured at the University under the Japanese control. In a lecture in Biology to a mixed class of Koreans and Japanese, the professor pointed out that the Koreans proved their inferiority to the Japanese

by the fact that the former had sound teeth, it being a fact that the more highly developed the human race the worse their teeth.

Regarding the treatment employed by the Koreans for various diseases, they may be placed under two heads, heroic and ludicrous, and with the exception of the immunity obtained empirically, by rubbing the scabs from a smallpox lesion in their nostrils as a prevention of this disease, the country was without medical science. Convulsions, for instance were supposed to be promptly cured by placing red hot coals on the head. Cholera, one symtom of which is excruciating pain in the legs, lead them to the belief that a rat had entered their tissues. The treatment evolved for this condition was drawing a cat on the door of the sufferer. He also said how their ignorance was exploited in the Western world, through their belief in the ginseng root as a panacea, since it resembled somewhat the shape of a man.


WHAT THE GRADUATE VETERINARIAN EXPECTS —— AND WHAT HE GETS
A CITY PRACTICE - CONSULTATIONS ONLY
IN PRACTICE —
COUNTRY PRACTICE - MUD - A TIN LIZZIE -
OFFICE HOURS
ON GOVERNMENT WORK -
SIR WE OFFER YOU
BUT DECIDES THAT MEAT INSPECTION IS QUITE SCIENTIFIC ENOUGH —

Our artist, disguised as a Ouija Board, gets a peep at the subconscious minds of the members of the graduating year and their future life's work.

The third experiment, which is with Christanity is proving a great benefit to the Koreans. As an example he described two leper stations, the one in which Christianity is taught, contain the happiest group of natives in Korea. In contrast there is another leper station where the inmates are treated in all respects like the first with the exception of the teachings of Christ. This station is perhaps the most miserable group of natives in Korea. This is accounted for by the teachings of the Korean religion, for although they believe in an Omnipotent Being, their God is only to be feared and not loved.

Odds and Ends

For a wee mon, what do you think of our Principal as a scrapper boys?

The present graduating class opines that it is the best looking lot ever appearing in Torontonensis from the O.V.C.

The national collection of microbes at the Lister Institute now contains eight hundred different specimens. Visitors are requested not to tease the germs or go near the cages. —(Punch).

Someone once said that a little knowledge is a dangerous thing or words to that effect. The seniors had an outbreak of blood counting during the pathology lab. period and attributes their high red blood count to their association with horses.

A poacher recently fined five pounds for being in a private park at night. was stated to have been carrying a lamp and several boxes of matches. No attention was paid to his excuse that he was curious to discover whether rabbits slept on their right sides or on their back.—(Punch).

The second year note with pleasure the suppression of Spatitis, from its ranks, as it is recognisel as a highly contagious not to say infectious disease of young men. Broguetomata however, is still prevalent and there are sporadic outbreaks in every class. It is hoped that with a change in the prevailing fashion. these luxuriant new growths will become fibrosed.

We have received information to the effect that extensive experiments are being conducted with the idea of crossing cats and snakes, with the hope of producing an animal that would skin itself once a year. This would greatly facilitate putting the much talked of cat and rat industry on a basis attractive to prospective investors.

The Sophomore year spent a few weeks at O.A.C., where 'tis said the female element of the natives caused quite a hypertrophy of the cardiac muscle of several of its members. Although not compensatory, it is reciprocatory, in one instance at lease, since one brunette braved dangers of wicked Toronto to be embraced by her ardent Romeo while jostled in the joyous jazz of the Freshies' at-home.

We had the pleasure of visits from some recent graduates, who are still in the ken of the undergraduates. Among them were Dr. A. N. Vining, formerly of Exeter but who has recently left there; Dr. Sellman, of Little Falls, New York, who looked us up in November and again renewed his memory in February; Drs. F. R. Armstrong and Rivington, of the Federal Meat Inspection, stationed at Montreal. Dr. Baskett has left Norwich and in his travels paid us a brief visit.

The inactivity produced by the mild character of the weather is said to have predisposed to the outbreak of "spotted fever" which started among the hockey players and was rapidly spreading. The direct cause of the complaint is not known, but most authorities agree that it produces an encephalitis, which is subsequently followed by fatty degeneration of the grey matter. The disease was

handled in a masterly manner, with the result that it was promptly stamped out, without actually resorting to the slaughter policy.

Recently our news sleuth was startled by an announcement in one of the local papers regarding a curious animal shot near Aylmer, which was part rabbit and part deer. His scientific mind ceased to slumber and visions of the missing link and fame alternately obsessed him. Putting on his overshoes and armed with a slide, he got on the track of the strange beast and proceeded to investigate. After much toil his hope to startle the scientific world came to naught, but he had the satisfaction of discovering that an enterprising native of Aylmer performed a neat operation on a dead rabbit, inserting in its cranium two small horns, as a means of giving publicity to the Aylmer Poultry and Pet Stock Show, where the freak was exhibited.

The ardor with which officials carry out the Temperance Act across the line, and the ludicrous position in which they are often placed, was told in the following story by Col Mundhenk of the Abbott Laboratories at the Ontario Veterinary Association dinner held at the Walker House on the 15th February. A dilapidated individual carrying a very battered hand bag had crossed from the Canadian side, and, as customary, had to go through a rigid examination. While awaiting his turn his bag was placed on the counter and it soon became apparent that all was not well with it, for a trickle of brownish fluid made itself evident. This was immediately spotted by the inspector, who saw an easy conviction. Dipping his fingers in the fluid for the purpose of verifying his suspicion by taste, he asked in that pleasant way of such officials: "Scotch?" "No," replied the dilapidated stranger, "Airdale."

After reading an account of the prosecution of an unqualified practitioner who styled himself an "M.R.C.V.S., of Toronto, Canada," by the R.C.V.S., we for a moment thought that Dr. McGilvray had overlooked another correspondence school. We find, however, that the defendant alleged that the letters M.R.C.V.S. did not refer to any Veterinary College or imply a veterinary qualification, but merely that he was a member of a Canine Veterinary Society.

A young priest, who was for the first time hearing Mass, was progressing nicely until he came to a very honest and prosperous-looking individual. Upon being questioned, this flourishing young man admitted that he was following the lucrative occupation of supplying the thirsty with drink, and vulgarly known as "boot-legging." The young priest was shocked, and never before having a confession of this type, he did not know what pennance to give. Admonishing the sinner and drawing his attention to the seriousness of the offence, he intimated that he must see an older priest with more experience. The peculiarities of the case were related in detail to an experienced priest in the vestry who was noted for the severity of his pennances, and in conclusion the younger man asked: "What would you give if you were in my place?" Shaking his head, the elder priest thoughtfully replied: "Not more than four dollars a bottle."

LATEST NEWS FROM ONION SKIN

Precocious Prisoner Pleads Prohibition—Officers Suspended

Smashing their way through the great steel doors and numerous chairs and tables piled against them, little Benny Spence, aged six and a half, and his younger sister, Agatha, aged five, broke into the Kort St. Police Station late last night. Sergeants Smithers and Muldoon, on duty at the time, declared they did not see the marauders until they had been strapped to the distilled water cooler by their Police suspenders.

The youthful Jesse James then ransacked the place and made off with several hundred dollars' worth of ladies' silk underwear and a fine pair of ivory bones. As he left with the swag, Benny turned and said distinctly, "Prohibition has forced me to take this step."

The story of the capture of the thieves was told to the Onion Skin by Morality Officer Cohen, who made the arrest. It appears that Benny's accomplice was induced to give away the secret of their den by offers of a barley stick which the detective always carries with him in case of emergency. In company with an officer, he visited the dive, which was on Binscarth near Glen Road, and caught the prisoner red-handed in the act of smoking a cigarette. It is also stated that the wretch was in a state of apple-pie jag.

It is hoped that this arrest will clear up the mystery of the hose wagon which did not return to the Fire Hall last Thursday at supper time, and which was found in the possession of Reuben Stax, of Streetsville, who was using it as a band stand. He declared it had been sold to him by a masked child for six cents and a drink of milk from his famous Red Cow.

Magistrate Annys Lee Hall, commenting upon the case, said to-day that a stiff sentence might be expected if the prisoners plead guilty. He even hinted at a term at the Dinglewood Home. "The heat of the crime wave must be squentched," he declared.—Reprint from "Goblin."

Here is Some Cigarette Money, Boys

Prizes of $5.00 and $2.00 will be given for the two best contributions appearing in the June and September numbers of this Journal, humorous or otherwise, from members of the undergraduate body, relating their experiences with preceptors or in any other business with which they may be connected during the summer vacation.

CONDITIONS

1. Contributions should not exceed one thousand words and must be written on one side of paper only.
2. Contributions must be handed in before the 15th of May, 1921, for the June number, and before Aug. 15th for the September number.
3. We reserve the right to publish any contribution, even if it is not a prize winner.
4. No prizes will be awarded if, in the opinion of the Judges, the contributions do not meet the approved standard.

   The Judges will be the Editor-in-Chief and two members of the Staff of the Ontario Veterinary College.

We shall be also delighted to hear from any student, even if nothing more than the state of his health or the condition of the weather, during the summer vacation.

The Ploughman

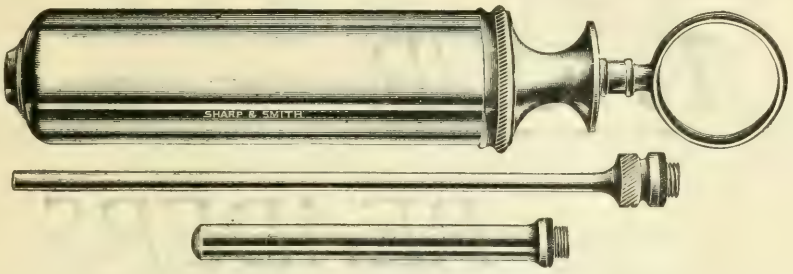
I earn my bread and know its worth,
  Through days that chill and days that
    warm;
  I wrest it with my strong right arm
From out the bosom of the earth.
Nor think me all uncouth and rough,
  For as I turn the furrows o'er,
  Far cleaner than the thrashing floor
I see the tender growing stuff.

They lie who say that labor makes
  A brute thing, an insensate clod,
  Of man, the masterpiece of God;
They lie who say that labor takes
  All from us save lust of pelf:
For no man need be deaf and blind
  Unless he wills it so himself.

This life I live is a goodly thing,
  My soul keeps tune with one glad song,
  The while I turn the furrows long,
A ploughman happy as a king.

—Jean Blewett.

Sharp & Smith Perfected Dose Syringe



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Each	$1.25
Per half dozen	7.00
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LITERATURE ON REQUEST

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Enclosed please find $2.00 to cover my 1921 subscription to the Canadian Veterinary Record.

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OPENINGS FOR VETERINARIANS

Insertions under this head will be made at the rate of $1.00 per fifty words or under for each insertion.

WELL established Veterinary practice in Middlesex County, fourteen miles west of London. Substantial two story brick house, good barn, garage, henhouse, proper out-buildings, three acres land, garden, fruit trees. Owner desires to sell out because of ill-health. Write J. A. Smith, Rural Route 1, Ilderton, Ont.

FOR SALE—A practice in Ontario, including house and barn and office furniture, or will sell practice separately. For further particulars apply P. G. Everitt, V.S., Hagersville, Ont.

FOR SALE—A good practice in Western Canada, including instruments, office fittings and books. Situated in a good farming district. For further particulars apply to W. Tanner, V.S., Girvin, Sask.

WANTED—A student, preferably a second year man, during the summer months. For further particulars write E. Tennent, Lucan, Ont.

WANTED—By a second year student, opportunity to practice with a veterinarian doing a country practice in Ontario. Write Soph., c/o Canadian Veterinary Record, 110 University Ave., Toronto.

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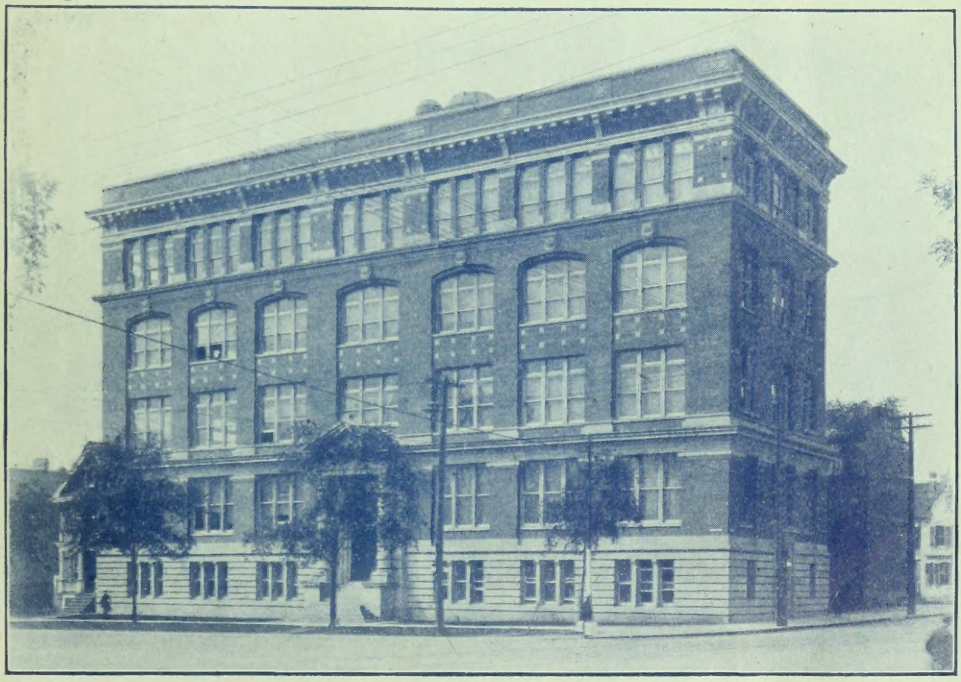

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